

BULLETIN
OF THE
AMERICAN GEOGRAPHICAL SOCIETY

Vol. XIX

1887

No. 4

INDIA.

BY

Dr. EUSTACE W. FISHER.

India is the middle one of the three great peninsulas which form the southern part of Asia. It is of an irregularly triangular shape, with the base to the north. This base is somewhat curved, and rests upon the great range of the Himalaya Mountains, which separate India from Thibet and Tartary. At the west corner the Safed Koh range runs southward to the Arabian Sea, separating India from Afghanistan and Baluchistan. On the east, a spur of the Himalayas called Naga runs southward to the Bay of Bengal, separating India from Burmah. The Arabian Sea and the Bay of Bengal complete the boundary. The two coasts measure (including British Burmah) something more than four thousand miles in extent, and gradually converge toward each other, until they finally meet at Cape Comorin.

The country extends from 8° to 35° north latitude, and from 67° to 97° east longitude, and its greatest length and breadth are each about nineteen hundred miles. It covers

one and a half million square miles, being about half the extent of the United States excluding Alaska. It has well been called an epitome of the whole earth, for within its limits may be found every climate, from the endless winter that reigns amid the eternal snows of its lofty mountains, to the unceasing summer that smiles through all the regions of the south.

By the census of 1881 India contains two hundred and fifty-six million inhabitants. It is therefore more densely populated than any other country in the world excepting China.

The name India is derived from the Sanskrit *Syndhus*, "to flow," from which root comes also the name of the river Indus. The term Hindu, applied commonly to the people, though, as we shall presently see, incorrectly, is a Persian form of the same word. Both terms properly refer to the Punjab region in the northwest, but have been extended to the whole peninsula.

Considered physically, we may make four divisions of India: the region of the Himalayas, the plain of the great rivers, the Deccan, and the wedge-shaped southern extremity.

Only the southern slope of the Himalayas belongs to India, but the influence of these mountains upon the country is so great, that it is necessary to consider them in connection with it. The word Himalaya signifies, "the abode of snow," a name fully justified by these stupendous masses, which extend in a double wall for more than fifteen hundred miles, and have an average height of twenty thousand feet, or more, above the level of the sea. In fact there are only a few passes which do not reach that height. The snow line on the southern slope is about seventeen

thousand feet above tide-water, which is considerably higher than the top of Mt. Blanc. The highest peaks at present known are Everest and Kinchinjunga in the northeast, 29,002 and 28,176 feet respectively. Between the two ranges is a long narrow valley, and north of the second range is the plateau of Thibet, supposed to have an average elevation of from thirteen thousand to fifteen thousand feet. This is, however, a matter of conjecture, and very little is known of the intervening valley, which for the most part also belongs to Thibet, for Europeans are rigidly excluded from that country.

This valley is, however, important to the student of Indian geography, for it is the source of the Indus, the Sutlej, and the Tsan Pu rivers, the last of which is probably the Brahma Putra. The importance of these rivers we shall see presently. The three rise near together in the western part of the valley. The Tsan Pu flows eastward, and enters the territory of Thibet, and has therefore not been explored. A river, which is believed from the general configuration of the country to be the Tsan Pu, comes out, however, from the eastern end of the valley, a thousand miles distant. From this point it is known as the Brahma Putra. It turns southward through Assam, receiving numerous tributaries, and finally unites with the Ganges to form an immense delta.

The Indus breaks through the mountains at the west end of the valley, passing through a stupendous gorge, said to be fourteen thousand feet in sheer depth, and then flows southward, entering the Arabian Sea. This magnificent stream is eighteen hundred miles in length.

The Sutlej rises somewhat to the east of the Indus in one of the sacred lakes of the valley. It breaks through

the mountains in a deep gorge, second only to that of the Indus, flows southwest, and after a course of 900 miles empties into that river.

Between these two there are three other smaller but goodly streams which flow into the Sutlej, and make up the five rivers that give the name of Punjab to the district.

The greatest of the Indian rivers, the sacred Ganges, rises on the south slope of the mountains, very near the source of the Sutlej on the opposite side. Its waters turn at once southward, and flow rapidly down to the plain, through which it pursues a devious course of about fourteen hundred miles, during which it sends off a large branch known as the Hoogly. It then unites with the Brahma Putra, and the combined streams form an immense delta two hundred and fifty miles long and of about the same breadth. The chief tributary of the Ganges is the Jumna, a stream eight hundred miles in length.

The territory on and near the southern slope of the Himalayas has a cool climate and the vegetation of the temperate zone. It is separated from the plain of the great rivers by the Terai, an extensive swamp covered with immense trees, and the haunt of wild beasts. This swamp is exceedingly fertile, but uninhabitable from malaria.

The plain of the great rivers, which extends from the Terai swamp to the Vindhya Mountains, comprises more than half the whole territory of India, and contains over three fifths of the inhabitants, and nearly all the points of historic importance. The land is of a level and uninteresting character, broken by but few hills, and is

generally fertile and healthy except near the eastern coast. It is well called the plain of the great rivers, for from almost every standpoint it may be said to be their creation. For six months in the year the Himalayas intercept the saturated monsoons that sweep up from the southward, and the constantly renewed snows form a never-failing supply for these great streams, which dash wildly down the mountains, and carry with them countless tons of rock and silt, especially during the rainy season, when the volume of the streams is much augmented. At these times the rivers overflow their banks and leave the greater part of this silt on the soil, thus fertilizing the country, as the Nile fertilizes Egypt. But the rivers are not only the fertilizers, they are also the means of communication. The Ganges is navigable for eight hundred miles, the Indus quite as far, and the Brahma Putra as far as it lies in Indian territory. By means of the branch streams, and the canals which have been constructed, nearly every point of this region is within the reach of water communication. This gives us ample reason to understand why civilization so long ago made a home in these fertile plains, and makes it clear why race after race has contended for their possession.

The Deccan is a high inland tract extending from the Vindhya Mountains to the Kistna River, with moderately high hills called Ghats on the east and west. Along the west shore the Ghats are steep and precipitous, with scarcely any openings. Those on the east are more broken, so that the rivers all run to the Bay of Bengal; but none of these are navigable. There is a fair amount of rain, and the country is reasonably fertile, though it has often suffered from famine, owing to local crop failures and the difficulties of transportation.

The fourth division, forming the southern extremity of India, comprises all that part south of the Kistna River. In its general features it is like the Deccan, though less elevated. It contains several large cities, and a range of hills called the Nilgherries, which are a favorite summer resort for the Europeans.

With the exception of the insignificant territories held by the French on the east coast, the small Portuguese province of Goa on the west, and the hill countries of Nepaul and Bhutan on the south slope of the Himalayas, the whole of India is directly or indirectly under the rule of Great Britain. The part governed directly by British authority, comprising about three fifths of the whole peninsula, is divided into twelve departments. At the head of each of these is an officer known as Lieutenant-Governor or Chief Commissioner, according to the importance of the province. The remaining territory consists of a number of states, still under the rule of native princes, whose authority is, however, limited by treaties which expressly acknowledge their subordination to the British government. British interests are guarded by certain officers placed by the general government in the native territories. The amount of control varies greatly, according to the circumstances of each case, but no one of these native rulers is allowed to make war upon another, or to enter into any engagements with foreign powers. All of these local British officers are under the orders of the central authority known as the "Governor General in Council," at the head of which is the Viceroy, at present the distinguished Earl Dufferin. The seat of government is located at Calcutta during the cooler weather, and is removed, when the intense heat of summer makes that

city unendurable, to the summer capital, Simla, a small town beautifully situated on a spur of the Himalayas, seven thousand feet above the sea-level. The court of the viceroy is maintained with much show and magnificence, which are made necessary by the fact that the natives have not yet learned to separate power from display, and would have little respect for authority which gave no external signs of its presence.

While there are many Europeans living in India, the number sinks into insignificance in comparison with that of the native population. Owing to the numerous invasions of India by different races from Central Asia, and the ceaseless struggles which have made the whole peninsula a battle-ground almost from the dawn of history until the establishment of British rule, it is difficult to trace the ethnological relations of the people. Not less than fifty different classes have been distinguished by students of Indian ethnology, but for our purposes it will be sufficient to divide the people into four.

First, the aboriginal tribes, who, pushed farther and farther by the advancing waves of invasion, at length made a successful stand for life and liberty in the extreme south, or retreated to the slopes of the Himalayas. These tribes number about one tenth of the whole population, and are distinctly non-Aryan in blood. The largest and most important division of them is the Tamils.

Second, the descendants of the Aryan invaders that brought the Sanskrit language into India, who have kept themselves comparatively free from marriage with other races. These are the great religious sect of the Brahmans, together with most of the higher-class inhabitants of Rajputana, and form another tenth of the whole.

Third, the Muhammedans, descendants of the fierce Tartar race that followed Tamerlane and Akbar in their career of conquest. These comprise nearly a fifth of the whole.

Fourth, the largest element by far, comprising three fifths of the population, who have sprung from various degrees of intermixture of the classes already mentioned, in most of whom, however, the non-Aryan type is predominant.

I have already said that the word "Hindu" is commonly but incorrectly applied to the people. In its proper use it refers to a religion, and in this sense includes substantially the aboriginal tribes as well as the fourth class just mentioned. The religious system of the Hindus is the result of a fusion of the doctrine of the Brahmans with that of the Buddhists, the former having decidedly the predominance. It is a remarkable fact that a religion which to-day numbers nearly half the population of the globe among its followers should have almost died out in the land of its origin; but there are now no professed Buddhists in India, unless we rate the Jains as such, and they, although wealthy and influential, number less than half a million, and, I believe, do not admit that they are disciples of Buddha, but claim that their faith, though closely resembling that taught by him, is of still more ancient origin.

The doctrine taught by Buddha may be summed up thus: Salvation is free to all, and entirely the result of a man's own conduct. Life is a probation, and as the man lives he will at death be born again into some higher or lower state of existence, and he who progresses steadily higher will at length become free from all desire or sel-

fishness, and in the end attain to the state of everlasting repose called Nirvana. The principal tenets taught by Buddha were respect for authority, self-denial, kindness to one's fellows, and regard for all animal life; and though Buddhism as a religion has so nearly passed away, these principles still govern the people, and to this day scarcely a Hindu can be found who will take animal life, even that of a rat or a snake.

The religion of the Brahmans is the outgrowth and development of that of the original Aryan invaders of India as we find it in the Vedas. The names and attributes of the gods change in the course of centuries, until we find them crystallized in the triad of Brahma, Vishnu, and Siva. Special manifestations of these deities have special names, and the ignorant peasant bows to his grotesque idol or local fetish, as the representative of the particular form of his chosen deity. The educated Hindu and the Brahman, however, know that these are but symbols, and believe that even the triad only represents the powers and functions of one great Being, the supreme cause and ruler of all.

The Muhammedans adhere quite closely to the tenets of their faith, though by no means as closely as the Arabs, and they do not show any of the intolerance so often experienced in lands where this religion is dominant. Their mosques are open to all, and great courtesy is shown to visitors.

There are about two million native Christians in India, and there is satisfactory evidence that Christianity existed there before the end of the second century. Tradition, indeed, names the apostle Thomas as the founder of the Church in India, but careful investigators are not willing

to accept this as established. But, be this as it may, there is no doubt that Christianity has existed there for sixteen hundred years, and though isolated for a thousand years through all the wars and struggles that have racked that sorely tried land, it has held its ground, and is to-day active and vigorous. The native Christian Church resembles the Church of Syria, and like that is divided into two sects, the Catholic and the Jacobite. Its members occupy the coast of Malabar in the southwestern part of the peninsula. In addition to this, Christian missionaries, both from our own country and from various parts of Europe, are doing successful work in various parts of India.

Before closing the subject of the religions of India, I must say a word about the peculiar sect known as Parsees. These are descendants of the ancient fire-worshippers of Persia, who, when their country was overrun by the followers of Muhammed, preferred exile to apostasy. The Parsees of the present day cling closely to the faith of their fathers. They number about two hundred thousand scattered through Northern India, though the largest number are found in or near Bombay. They maintain their race individuality as strictly as do the Jews, and, like them, devote themselves for the most part to mercantile pursuits and banking. They are keen, shrewd, and successful, but high-minded and honorable men.

Closely interwoven with the religions are the caste distinctions. Among the original Aryans were three well-marked classes: the Brahmans, who exercised the priestly functions; the Kshattriyas, who were the warrior class; and the Paisyas, or farmers. Then below these was a fourth caste, composed of the earlier inhabitants reduced

to serfdom, called Sudras. The distinction between these different castes was strongly marked; each kept strictly to its own occupation, and intermarriage and even intimate association were forbidden. The Brahmans by their intellectual superiority easily took the first place, and they are still readily distinguished from the rest. But among the others the boundaries are becoming less marked under the influence of British rule, which places all upon a legal equality.

The languages spoken by the inhabitants of India are of great variety. In the south the various dialects are all of Dravidian origin. Four of these have developed into languages having a considerable literature. The Tamil especially, which is the best representative of the Dravidian stock, has works of literary merit which date back to the ninth century.

In the north the languages are generally of Aryan origin. There are a number of well-marked dialects; of which three, the Hindi of the former kingdom of Oude, the Maráthi of Rajputana, and the Bengali of Bengal, have been most highly cultivated. Their literature contains works of value in poetry, philosophy, fiction, science, and the drama, and the literary activity of the present time is even greater than that of any previous period.

These languages are descendants of the Prakrits or spoken languages of the early Aryans. Like our own language, they have borrowed freely from whatever sources would furnish the material which the development of the language demanded. But in grammar and in structure they have remained essentially Prakrit, subject, of course, to the natural growth and change of two thousand years.

Education is well provided for. Primary schools, where the rudiments are taught, are found everywhere. In the large villages are middle schools, and at the head-quarters of each district is an upper school, where the work is done in English. There are nearly one hundred colleges and professional schools, and four universities or examining bodies which have the right to confer degrees. All these are under the supervision of the government. There are also many large and flourishing schools conducted by missionaries.

India is essentially an agricultural country. It is estimated, by the best authorities, that nearly ninety per cent. of the population gain their livelihood by working the soil. The holdings are small, and in the thickly populated districts the unremitting labor of the peasant farmer and his family is needed to make the little plot yield their support. But a large number, probably an eighth of the entire population, are not even landholders, but earn a precarious existence as day laborers, and when the crops fail the horrors of famine at once stare them in the face. The extension of railways has in some degree enabled the government to furnish supplies in case of necessity, but where the people number, as they do in places, two to the acre, the means for dealing with the problem are still inadequate. The only way which could be made effective, would be to induce a movement of the people from the over-crowded localities to those which are more thinly populated. There is a sufficiency of arable land, still uncultivated, to provide for all, but the peasant clings to his home and surroundings, and prefers privation and suffering there, to the prospect of ease and comfort in some unknown neighborhood. Efforts are making in this direc-

tion, however, with some success, and it is hoped that in time the difficulty may be overcome.

The Indian farmer has but few implements, and those of a rude character, but by faithful toil he makes his tillage thorough. Where irrigation is necessary means have been devised to effect it, and he is not ignorant of the value of manure, though he has but little to use, as the droppings of his animals are generally employed for fuel. He knows that it is necessary to change his crops, though he has not attained sufficient knowledge for scientific rotation.

The natural fertility of the soil, with the constant warmth and the heavy rains, enables the farmer, in average seasons, to raise two and sometimes three crops in a year.

Where there is abundance of water, as in the great deltas and in the low strips of land along the coast, rice is almost the only product. This requires a constant supply of water, and it can be raised, therefore, only where the rainfall is heavy, or where there are streams that furnish the means of irrigation. When the conditions are favorable, rice is a profitable crop, and it is estimated to be the staple food of about one third of the whole population.

Wheat is raised in large quantities in the north and central parts of the country. The average yield is about thirteen bushels to the acre. The quality is not equal to that of our best wheat, but it is good, and the nominal cost of labor enables the British merchant to buy the Indian grain at a figure which makes it a serious competitor against ours. The crop is steadily enlarging from year to year, and most of it is exported.

Millet, of which there are several varieties, is the most extensively cultivated of the cereals. This grain and rice supply the food for nearly all the people. There are fruits and vegetables of very many kinds, but they have not the flavor of those of more northern climes. Coffee and sugar are raised to some extent in the southern part. Tea, the cultivation of which was introduced by Europeans scarcely fifty years ago, is now one of the most important products. Besides the immense amount used in the country, not less than seventy million pounds are annually exported, the greater part going to Great Britain.

The principal products of India not used for food are cotton, tobacco, jute, indigo, and opium. The cotton and tobacco are almost entirely used at home, for their quality will not allow them to compete, in the European market, with the American products. Opium is a government monopoly, and yields an annual revenue of about forty million dollars. There is a considerable consumption of it in the north among the semi-Mongolian races, but by far the greater part goes to China.

The cultivation of the cinchona tree was introduced into India in 1860, and the experiment has proved successful. Enough bark is now produced to supply not only the local demand, but that for exportation, in quantities sufficient to pay the interest on the capital invested.

The mineral productions of India are of great variety. Gold, copper, lead, tin, and antimony are found, though not in large quantities. There is no silver, and in view of this fact it seems strange that this metal should have become the general currency of the country. Iron ore is found in considerable quantities and of excellent quality, but it has not been thus far successfully worked, owing

to the absence of the fuel and the flux necessary to reduce it, in the vicinity of the districts where the ore is found. Coal is abundant, but it is so inferior to English coal that much of the latter is still imported. In the Punjab are enormous salt cliffs, which yield a large revenue; salt, like opium, being a government monopoly. Almost all the natural saltpetre produced in the world is found in India.

Manufactures are of little comparative importance. All through the country, weaving, both of cotton and of wool, is carried on by means of hand-looms, and much of the native demand is thus satisfied. Silk is also woven to some extent. The Cashmere shawls and the carpets and rugs of the north are of world-wide fame, and metallic work and wood-carvings of exquisite beauty delight the eye in most of the cities in the plain of the great rivers. But with the exception of two or three cotton and jute factories started by Englishmen, all the manufacturing is done by individuals and single families, and but a minute fraction of the people is thus engaged.

The domestic animals are cattle, horses, donkeys, sheep, and tame buffaloes. The cattle have a large hump over the shoulders, against which the yoke presses when they are employed in labor. The general condition of all these animals is poor, owing to the want of intelligent care, and also, during the dry season, to an insufficiency of food. Camels and tame elephants are used in the north. The shooting of elephants is now forbidden by law, and the right to capture them is leased by the government only under stringent conditions.

There are many varieties of wild animals, of which the most worthy of note are the tiger and the leopard. These are found in all parts of the country wherever there is

jungle, and though the persistent hunting of them during the last fifty years has diminished the number to some extent, they are still numerous. Their favorite prey is the deer and wild hog, and when they can find these they are not likely to attack domestic cattle. As a rule they avoid human beings, but if a tiger has once tasted human blood he is sure to attack every person he meets.

The bear, wolf, jackal, rhinoceros, and monkey are also found in great numbers.

Birds are also numerous. The Indian crow is found everywhere. He is somewhat larger than our variety, and has a bluish head. He has all the wickedness of his tribe, and is much more daring than the crow of other countries. Parrots abound, and there is a great variety of small birds. Among the birds of prey there are several species of eagles and falcons, and huge vultures, which do the work of scavengers.

Of reptiles there are two varieties of crocodiles and innumerable serpents. These last are the great pest of life in India, and more than twenty thousand persons annually fall victims to their deadly poison. The great boa-constrictor never leaves the thick jungle, but the rest are found everywhere. The two varieties most dreaded are the cobra and the krait, the bite of both of which is inevitably fatal. The people seem to dread the krait more than the cobra, as they say the latter will retreat if he can, whereas the former will not move for any thing. In the rainy season the snakes often enter the houses and manifest a special liking for the beds. A lady, the wife of a tea-planter, told me that she had had eight cobras killed on the blinds of her bedroom within one week. However, for the consolation of those who may be thinking of

a trip to India, I will say that during the winter season, the only time of the year when travelling is practicable, the serpents retire to their holes or are at least very inactive, for during a quite extended tour of nearly three months I did not see a single snake, excepting a few in the hands of snake-charmers, nor did I hear of any instance in which a white person had been bitten.

The means of communication and of carrying on commerce are well developed. There are about thirteen thousand miles of railway, upon which a large and constantly increasing business is done. The wagon roads are carefully constructed, generally macadamized, and where the country is hilly the gradients are very easy. In fact, many of these roads are equal to the mountain roads of Switzerland. The great rivers, as I have before said, are the highways of an immense traffic, and a number of judiciously constructed canals in various parts of the country add to this cheap and easy means of intercourse.

It remains only to say a word in regard to the effects of British rule in India. It is with great diffidence that I touch this part of the subject, for opinions vary widely, and my brief visit afforded neither time nor opportunity for a sufficient study of the subject to warrant any positive conclusions. There is undoubtedly much friction, and, on the part of many of the natives, a feeling of hostility towards their rulers. On the other hand, taxes are undoubtedly lighter than they were before British occupation, and than they are now in many of the States under native authority. The resources of the country have been developed and its commerce has greatly increased, and opportunity to gain an education is within the reach of nearly all.

These are facts that are palpable to any unprejudiced observer. At all events, as the old proverb says, "those that live in glass houses should not throw stones," and until we can expunge from history the story of the Indians of the Western Hemisphere, it becomes us to criticise gently the conduct of our British cousins toward the Indians of the East.

HOW TO ENLIVEN GEOGRAPHICAL INSTRUCTION AND TO LIGHTEN IT.

BY

DR. KONRAD GANZENMÜLLER, OF DRESDEN.

DEFINITION OF GEOGRAPHICAL NAMES.

The teacher of geography finds it impossible to avoid using a great number of foreign names; and these the student must, of course, expect to bear in mind. This, which is at first a discouraging element in the study, will become extremely attractive when the scholar is made to see that the names are not mere sounds, but, on the contrary, significant forms which may be interpreted.

It is true that this is not the case with all names. There are some which cannot be explained; and the method of instruction will sometimes not permit an etymological explanation of words of a remote and obscure origin. Passing over these, there will yet remain no small number of geographical names which can be made clear and intelligible through the languages to which they belong, if only the proper method be used.

Merely to give the name and the meaning of it, whether this be done by the teacher himself or set down in a book, would be to impose an additional burden on the scholar's memory. If rightly used, on the other hand, the explanations would come to the help of the memory, lighten the task of the teacher, and give a liv-

ing interest to the lessons. Even the most repellent city-names of China may be made intelligible in this way.

With the map of this, the most densely populated empire on the globe, before him, the teacher will remind his pupils that in English and in German, monosyllabic words are joined directly to others, *e. g.* : North Sea, South Sea, Deer Lake, Salt Lake, Cape Town, New Zea-Land, Nord-see, Ost-see, See-land, Land-see.

He will then add that the Chinese have in their singular language none but monosyllabic words, which can only be joined together indirectly. To illustrate, he will write on the blackboard the words : *Pe* = north, *Tong* = east, *Nan* = south, *Si* = west ; and in another line : *King* = capital, or king's household ; *Hai* = sea.

If under these be written the names *Peking* and *Nanking*, the scholars will see at a glance that by the former the Chinese understand the northern capital, and by the latter the southern capital. These two capitals of China, it might be shown, have their parallel in the Russian cities St. Petersburg, the residence of the Czar, and Moscow, the place of his coronation.

By this simple process even a slow-minded pupil will soon cease to be bewildered by these strange names, will remember them with comparative ease, and will give them their true relative position.

If, now, the teacher points to the sea that bounds China on the east, he finds that the scholars perceive it must be called in Chinese *Tong-hai*, and that *Nan-hai* must be the name of the sea that washes the southern shore. In this southern sea there is the island *Hainan*.

This will seem still less extraordinary that *Tong-hai* is equivalent to the English East Sea and the German Ost-see.

These examples having been sufficiently explained, and the words set down on the blackboard having been copied by the pupils, the teacher will then write under *Si* the words: *Chu* = pearl, *Yang-tse* = blue, *Hoang* = yellow; and below *Hai*: *Kiang* = stream, *Ho* = river.

Attention will then be called to the confluence of three rivers above and north of Canton, flowing from the respective cardinal points after which they are named. The *Si-kiang*, or west stream, has its place in most of the school-books, and the pupil, looking for a *Pekiang*, or north stream, and a *Tong-kiang*, or east stream, is able at once to form in his mind and to retain a far more lively idea of a river-system and the importance of its commerce than that which any other mode of teaching could furnish.

The three rivers just named unite and form the *Chu-kiang*, or the pearl stream. The blue stream is the *Yang-tse-kiang*, which is very broad and deep in its lower course, and navigable for large vessels a very great distance from its mouth. The *Hoang-ho*, or yellow river, has cut its bed deep through the yellow soil, from which it derives its color. Yellow Sea = *Hoang-hai*.

With younger pupils the explanation of names might stop at this point for the day, and the rest of the lesson might be devoted to a general account of China and its remarkable people. For older scholars the teacher might proceed to speak of the coast, the mountains, the rivers, etc. For these pupils he would write below *Hoang*: *Thián*, or *Tién*, = heaven; *Shang* = the upper, upward; *Han* = sand; *Chung* = the middle; and below *Ho*: *Shan* = mountain; *Tsin*, or *Chin*, = place; and

in a third line: *Thian-shan* = mountain of heaven; *Tien-tsin* = place of heaven.

Here the teacher would point out that the word *Hia* signifies *below*, and that the Chinese call their empire by the name of *Tien-hia*, "below heaven," meaning by this the earth; and he would correct in this way the mistaken expression of the "Celestial Empire."

Then would follow: *Shang-hai* = up the sea; *Han-hai* = sand sea (desert of Gobi); *Chung-king* = the middle capital; *Tong-king* = eastern capital, or country; *Mai* = to buy; *Mai-mai* = to buy and sell, to trade,—a similar combination to that of the Latin *quisquis*. *Mai-mai-tchin*, usually *Maimatchin*, = a place of trade. *Fu* designates, it would be said, a city of the first rank, and *Cheu* one of the second rank.

It is easy to see that a healthy mind must be roused and interested in the highest degree by a subject presented in a manner at once so concise and so direct. What were before unmeaning sounds have become instinct with life through the explanations made, and it cannot be doubted that whatever is read or studied concerning China will be held with a firm grasp. With the application of the same principle to the names of Mongolia, there will be found occasion for striking comparisons. *Dagh* = mountains; *Muren* = river; *Tengri* = Heaven; *Kara* = black.

The Mongol *Tengri Dagh*, it will be seen, has the same meaning as the Chinese *Thian-shan*, mountains of heaven. *Kara Muren* (now *Amur*) is the black river. If the pupil is now reminded that in the Balkan Peninsula, in Eastern Europe, there are to be found the *Kara Dagh*, or black mountains, and the *Karassu*, or black river, he

cannot fail to note and to remember the wide range of the Mongol race. And when he hears, in the lesson on Japan, that *To* means east, and *Sai* west, and *Kio* capital, so that *Tokio* = eastern capital, and *Saikio* = western capital, he must be struck with the likeness of these expressions to the Chinese *Tong-si-king*.

In treating the East Indies it would be advisable to consider the Archipelago, Hindustan, and Farther India all together, and to divide the names according to the different languages. Many of these names belong to the Sanskrit, or to its derivative, the Hindustani.

It will be best to study at first the appellations of the islands and mountains and rivers, and afterwards to take up the cities. *Diva*, or *Dvipa*, it is found, means island; *Mataia*, the coast of Malabar; *Singh*, lion; *Java*, millet, and *Lak*, or *Laksha*, one hundred thousand.

Of the old name *Java diva* (millet island), the first part only has survived. It is the same with *Singhala divpa*, from which the *dvipa* has been dropped, while the *Singhala* has become Ceylon, though the inhabitants are still known as Singhalese.

The Laccadive Islands are so called because of their immense number: *Laksha dvipas* = hundred thousand islands; and the Maldives take their name from the words *Malai dvipas* = islands of Malabar; *Sindhava* = stream; *Nadi* = river; *Brahma* = name of God; *Sankar* = a surname of the god Siva; *Putra* = a son; *Alaya* = abode; *Hima* = snow; *Gauri* = white; *Maha* = great.

Putting these together, it is easily seen that the abode of snow must be *Himálaya*, that the white (god) Siva will be *Gaurisankar*, and the son of Brahma, *Brahma-*

putra. We shall find in *Mahanadi* the great river, and in the analogous combination *Maharajah*, the great king.

The name of India itself is taken from the word *Sind*, or *Indus*, = a stream. *Pura* means a city; *Kata*, a holy place; *Kali*, the goddess of destiny; *Nagor*, a city; *Sri*, the goddess of good fortune; *Naga*, a serpent.

In the history of Alexander the Great there is mention of *Pura*, a city of Caramania; and Singapore is of course *Singapura* = the lion's city; the island taking the same name; *Nagapur* is *Nagapura* = the city of serpents; *Srinagar*, the city of Sri (the goddess), and Calcutta *Kalikata*, the holy place of Kali, the goddess of destiny.

In Northwestern India the names are frequently of Arabic and Persian origin: *Stan* = land; *Ab* = water (and hence the land between rivers); *Abad* = city; *Al-lah* = God; *Hindu* = Indian; *Haider* (or *Hyder*) a proper name = lion; *Penj* = five. From these we have: *Hindustan* = the land of the Hindus; *Penjab* (or *Punjab*) = land of five rivers; *Allahabad* = the city of God; *Hyderabad* = city of Hyder.

It will illustrate the vast extent of the Arabian empire in former times to remind the pupil that the name of the southern district of Portugal, Algarve, is also Arabic, and signifies the West.

India (including, as already mentioned, the islands) has also names of European origin, such as the English words: *Strait*, *Mount*, *Settlement*. Mount Everest (*Gaurisankar*) received its present name from that of the Englishman who ascertained its height, 29,004 ft. The Straits Settlements are the settlements along the Straits of Malacca.

Dutch names also are met with: *Zorg* = care; *Buiten* = without; *Buitenzorg* = without care,* a town of Java, thirty-six miles south of Batavia, the capital, which has a fine harbor, but an unhealthy climate.

The lessons on Iran, Arabia, Asiatic Russia, and Asiatic Turkey would proceed in a similar way.

In Africa there might be made three divisions of names: those of North and Northwest Africa; those of Middle and South Africa, and those of the East and the West coasts and the islands.

In Middle and South Africa the negro languages are very much alike, and new words are formed by prefixes, as in the following: *Sunga* = white; a white man is called *Msunga*, and a number of white men, *Wasunga*; the white man's country is *Usunga*, and his language is *Kisunga*; *U* = country, and with this prefix are formed the many names of countries in *U*, such as: *Ukerewe*, an island in the lake Victoria Nyanza, the source of the Nile; *Nyanza* and (farther to the South) *Nyassa* = lake; and of these we make *Ukerewe Nyanza*, or Lake Ukerewe, the Victoria Nyanza, named in honor of Queen Victoria of Great Britain.

In like manner the Albert Nyanza received its name from the Queen's consort, Prince Albert.

Uganda is a fertile region to the northwest of the Ukerewe Nyanza; *Usagara* is the part of the East African coast recently acquired, near Zanzibar, by the Germans, and the native inhabitants are called *Wasagara*. Farther to the westward lies *Unya-m-wesi*, the moonland, from *m-wesi*, the moon. The people are *Wa-nya-m-wesi*, inhabitants of the moonland.

* Cf. the French *Sans-souci*.

On the Zambezi (which means *stream*) are the Victoria Falls, known to the natives as *Mosivatunya*, a word that expresses the astonishment and awe with which they beheld this mighty cataract: *Mosivatunya*, "Here roars the smoke."

Surely, every thoughtful scholar must say to himself that men who can give utterance to their emotions in words so fit do not stand on the level of the lower animals, and he must feel that this strange African name, with its explanation, takes firmer root in his memory than the more familiar Victoria Falls.

The coasts of Africa, we learn from history, were first visited by the Portuguese, and the record of their presence endures in the appellations born by the natural features of the country. For instance: *Angra* = bay, *Cabo* = cape, *Agulha* = needle (and needle of the compass), *Corrente* = current, *Esperança* = hope, *Pequena* = little, *Blanco* = white, *Verde* = green, *Negro* = black, *Boa* = good, *Tormentoso* = stormy, *De* = of (sign of the genitive).

The pupils will see for themselves that *Angra Pequena* means little bay, and the teacher causes them to observe how the name of the bay has been extended to the bordering coast. *Cabo Blanco*, white cape, *Cabo Verde*, green cape, and *Cabo Negro*, black cape, present no difficulty to the learner.

In 1486 Bartholomew Diaz reached almost the southern point of the African continent, and found the seas so stormy that he named the cape *Cabo Tormentoso*, and turned back. King John II., however, looking forward to a successful doubling of the cape, changed the name given by Diaz to that of *Cabo de Boa Esperança*, Cape of Good Hope.

Cape *Aguilhas*, or the Needles, is so called because at this point the compass varies, and *Cabo das Correntes* is the cape of the currents, which are here very strong.

The native name of the eastern cape of the continent was changed by the Portuguese to *Guardafui*, from the words *Guarda*, caution, and *fui*, I was (there). The meaning then would be: "Caution! I was there, and know the danger of the navigation." *

Other Portuguese words are: *Ilha* = island, *Ponta* = point, *Porto* = port, *Principe* = prince, *Palma* = palm, *Madeiro* = trunk of a tree, wood, *Anno* = year, *Natal* = Christmas, *Bom* = good, *São* = saint, *Bojar* = to project, *Tres* = three, *A* = the (fem. article). From these may be explained at once: *Madeira* = wood island (it was thickly covered with forests, when discovered), *Ilha do Principe*, or *Principe*, prince's island, *Annobom* = New Year's Island (it was discovered on New Year's Day, 1471), *São Thomé* = St. Thomas, *Cape Bojador* = the prominent cape, *Cabo das Palmas* = cape of palms, *Cabo de Tres Pontas* = cape of three points, *Port Natal* = Port Christmas (at this place Vasco da Gama spent the Christmas of 1497). Explained in a similar way, the names taken from other languages will be found to be not less significant.

When we come to treat of Europe it will be found that the Balkan Peninsula played a most prominent part in ancient history; and here the geographical names must be arranged according to the different languages from which they are derived. There is a great diversity in these languages, and from these introductory remarks

* The explanation sometimes given of this word—"Take care!"—is without meaning.—(K. GANZ.)

it will be possible to form a clear conception of the agitated life led by the people of this region. From the Greek are: *πόντος* (Latin, *pontus*) = sea, *πόρος* = ford, *νῆσος* = island, *ἡπειρος* = continent, *ισθμός* = isthmus, *ὄρος* = mountain, *ποταμός* = river, *πύλος* (pl. *πύλαι*) = gate, *ὁ κύων* (gen. *τοῦ κυνός*) = dog, *βοῦς* (gen. *βοός*) = ox, cow, *ἄξ* (gen. *αἰγός*) = goat, *κεφαλή* (pl. *κεφαλαί*) = head, *κύκλος* = circle, environs, *θερμός* = warm, *ἄξεινος* = inhospitable, *εὐξεινος* = hospitable, *ἅγιος* = holy, *πρό* = before, in front.

The ancient name of the Black Sea, *πόντος ἄξεινος* (the inhospitable sea), was changed after many Greek colonies had been founded on its coasts into *πόντος εὐξεινος* (*Pontus Euxinus*, or the hospitable sea). *Bosporus* = ox-ford or cow-ford, so-called because the fabulous Io was said to have crossed it as a cow. *Propontis*, named from its position in front of the Black Sea, as well as of the Aegean. *Hellespont* = sea of Helle, because here, according to tradition, Helle fell into the water and was drowned. *Kyklades* (the Latin *Cyclades*), named from the word for circle, because they encompass the holy island of Delos. *Peloponnesus* = the island (or peninsula) of Pelops, who landed there from Asia. *Epirus* = the continent, as opposed to the neighboring Ionian Islands. Mount Athos was called the *Hagion Oros*, or sacred mountain. *Kynoskephalai* (Latin *Cynocephalæ*) = the dogs' heads.* Battle, 197 B.C. *Thermopylæ* = the gate of the warm springs. *Aigospotamos* = the goat-river. *Isthmus* of Corinth (*isthmus*, in English). To continue the illustration: *πόλις* = a city, *χαλκός* = ore, copper. *μέγας* = great (fem. *μεγάλη*, neut. *μέγα*), *ἡ* = the (fem,

* Two ranges of hills with this appearance.

sing.), *αἱ* = the (fem. pl.). *Constantinople* = city of Constantine, who made it his capital, A.D. 330. *Adrianople* = city of Hadrian, Roman Emperor, 117 to 138, A.D. *Philippopolis* = city of Philip. It was founded by Philip of Macedon, who reigned from 359 to 336, B.C.

Megalopolis, (*ἡ μεγάλη πόλις*), = the great city. *Pylus* = the door, or entrance. A considerable port of the Peloponnesus. *Chalcis* = city of ore. The inhabitants of this city, which was on the Island of Eubœa, founded colonies in Thrace, and these were called Chalcidian cities (*αἱ Χαλκιδικαὶ πόλεις*). From these cities the peninsula *Chalkidike* (Latin, *Chalcidice*) took its name.

From the word *μέτωπον*, which means *forehead*, *front*, was derived the name of Cape Matapan, the most southerly headland of Greece. *λαμπειν* = to shine. From this verb is taken the name of Olympus = the light-shining mountain, its summit being covered during a great part of the year with snow. *ἀκτὴ* = a steep coast; and hence Attica, formerly *ακτική*, = coast land. *παρθένος* = virgin; and from this comes the name of the Parthenon = the house, or the temple, of the virgin goddess Athene. *ῥυνθος* = fig. The city Olynthus was, therefore, the place, or city, of figs. *ἄκρος* = the highest; and the Acropolis was the citadel, the highest point of the fortified city. *πλατὺς* means broad, or flat; and Plataea is equivalent, therefore, to "the broad field." *σπείρειν* = to sow, or to scatter. From this verb is derived the name of Sparta = the scattered city, consisting of four or five open places. The Sporades, or scattered islands, have the same derivation.

From the Latin *palatium*, the royal residence, or castle, comes the name of Spalato, in Dalmatia.

From the beginning of the great migration, various peoples of Slavic race pushed their way into the peninsula, as many of the names show :

Grad = castle; *Belny* = white; *Belgrad* = white castle. At a later day the Turks came in to overrun the land; and in their language *Balkan*, or *Dagh*, means mountain, and *Kara* black. The Balkan Peninsula is, therefore, the mountainous peninsula; and *Karadagh* is black mountain, *black* here meaning rocky, or sterile.

It is known that in very early times the Phœnicians carried on an active commerce between Asia and Europe. The word *salām*, which in their language means *peace*, gave the name to the island of Salamis, properly the place, or settlement of peace. There was a colony of the same name in Cyprus, and almost identical with it are the Hebrew *Jerusalem*,* the place of peace, and the Arabic *Dar-es-salam*, or district of peace, on the coast of Zanzibar. The ancient name of the Balkan range was the Hæmus, and from this the peninsula was named.

Rumili (Rumelia) means the country of the men of Rum (so the Turks called the Greeks living in those parts); *Romuni* (Rumanians), or Romans, whose tongue is very like the Latin; *Rumania*, the country of the Romans.

In a similar way are to be taken up and explained the names in Italy, in the Iberian Peninsula, and in France.

In the case of Great Britain and Ireland it will be found, by scholars acquainted with English, that many of the names are intelligible at first sight. Take, for instance, the following: The English Channel; the Strait

* Salem, in Massachusetts, in North Carolina, in Oregon, and other American States.—(K. GANZ.)

of Dover; the Firth of Clyde (bay of the river Clyde); the Land's End (compare with this Cape Finisterre—*finis terræ*); the Grampian Mountains; the Grand Junction Canal; the Grand Canal; the Royal Canal; Newcastle; Oxford; Waterford; Plymouth (city at the mouth of the river Plym); Eddy = whirlpool, and so Eddystone = whirlpool rock (about which the sea is very stormy).

In the German schools the teacher expects the pupils to find for themselves the translation of these English names.

In the Keltic tongue *Pen* means a mountain; and from this we have the Pennine Chain; *Ben* Nevis = Nevis mountain; and the names of other Scottish peaks.

Vergyn (Erin, from which comes Ireland) = the western island, or land of the west.

England (Angle land) has its name from the Angles and Saxons, who settled in Britain in 445 A.D.

Both in English and in German schools it is easy to interpret and explain Danish and Swedish geographical denominations. In Swedish, *Sund* = strait, sound; *Stäke*, or *Stock*, strait or passage; *Oe* (*ö*) island; *Holm*, little island; *Land*, land; *Fjell*, high table-land; *Elf*, river; *Borg*, castle; *Köping*, market-place, trading-place; *Karl*, brave, valiant man; *Troll*, evil spirit, devil; *Sala*, hall; *Hätta*, cap, hat; *Snee*, snow; *Nord*, north; **Long*, long; *Ny*, new; *Klar*, bright, clear; *God*, good; *Upp*, high; *Oland*, island; *Godland*, good land; **Longfjell*, long high land; *Sneehätta*, snow hat (covered with snow); *Dalelf*, valley river; *Klarelf*, clear river; *Trollhätta* (rock), devil's hat rock (Trollhätta Falls); *Dalkarle*, valley men (brave men of the valley); and from this word comes

* The Swedish vowel here represented by *o*, has the sound of *o* in *note*.

the name of the province Dalecarlia; in German, Dalekarlien.

It ought here to be mentioned that in Swedish the definite article is appended to the substantive. For instance: *Dal* = valley; *Dallar* = valleys; and *Dallarne* = the valleys. So *Mälarn* = the Mälar; and to say and write in another tongue the Mälar Lake is to commit an error; *Stockholm* = island of the sound, the city being situated where the Mälar Lake is connected by two passages with the Baltic Sea; *Sala* = hall, and *Upsala*, high hall; here was the oldest temple of the north; *Nordköping* = north market-place; *Nyköping* = new market-place; *Göteborg* = Castle of the Goths; and *Göta-elf* = river of the Goths.

In the Danish language, which is spoken also in Norway, we find: *Fiord* = the long inlet of a bay (compare the English *firth*): *O* * (as in Swedish) = an island; *oer* = islands; *næs* = point of land, promontory; *field* = table-land, high plateau; *land* = land; *havn* = port; *borg* = castle; *faar* = sheep; *lind* = lime-tree; *halde* = pointed rock, battlement; *kiøb* * = purchase; *lyst* = pleasure, lust; *lang* = long; *ny* = new; *lav* (*laa*) = low. From these can be explained:

Throndjemfiord = Bay of Drontheim; *Langeland* = long land; *Laaland* = flat, or lowland; *Faaroer* = sheep islands; *Lindesnæs* = promontory of lime-trees; *Langfield* (Sw. *Longfiell*) = long table-land, or range; *Kiøbenhavn* (Copenhagen) = purchase, or trading, port; *Frederikshavn* = Fredericksport; *Frederiksborg* = Frederick's castle; *Frederikshald* = Frederick's battlement (a fortress

* The Danish letter in this word and in *Kiøbenhavn* is made with a stroke through it from right to left.

against Sweden); *Nyborg* = Newcastle; *Marienlyst* = Mary's pleasure, a noted watering-place.

We come next to Russia and the Slavic countries. In treating the Polish and Czech geographical names, the teacher should point out the great extent of country formerly held by the Slavs between the Elbe and the Saale rivers and the Fichtelgebirge and the Böhmerwald. As a consequence, many of the names in the eastern part of the neighboring country are of Slavic origin and call for explanation.

The termination *ice* (*itz*) marks a great number of these names: *TePLY* = warm; *Teplíce* (*Teplitz*) = warm wells, or springs; *Kamen* = stone; *Chemnitz* (Saxony) = place, or city, of stones; *Kremen* = flint; *Kremnitz* (Hungary) = city of flints; *Mor* = sea; *Po* = along; *Pomorici* (Pomerania) = land along the sea; *Brod* = ford; *Deutschbrod* = German ford; *Böhmischbrod* = Bohemian ford (battles were fought at these two places in the Hussite war); *Blato* = swamp; *Balaton* (*Platten see*) = swamp lake (drainage has now converted much of the swamp into dry and fertile land); *Lusa* = marsh; *Lausitz* = marshy woodland; *Pustina* = desert, and from this word the heaths of Hungary received the name of *Pusztas*; *Lipa* = lime-tree; *Lipsk* (*Leipzig*) = place or city of lime-trees; *Bukowi* = beech grove; *Bukowina* = land of beech groves; *Hrschak*, *Krak*, = bush, shrub; *Krakau* (Cracow) = place of bushes; *Zito* = grain; *Zitau* = city of grain; *Halic* = salt; *Galicia* = country, or place, of salt.

In Australia and Polynesia, and also in America, many geographical points and places have been named after distinguished seamen, or other men of great renown, in

honor of certain days, or events, and the like. Concerning these, the teacher will state the most important facts, remembering, however, that the main object is always to be the explanation of those names which can be easily interpreted from the respective languages, while their forms are such as to admit of their being traced by the unassisted efforts of the students themselves.

In South and Central America, in Mexico, and in the West Indies, very many names come from the Spanish (in Brazil they are of Portuguese origin), and these are often easily understood: *Rio* = river; *Norte* = north; *Plata* = silver; *Colorado* = red; *Negro* = black; *Grande* = great; *Rápido* = rapid; *El* = the (masc.), *La* = the (fem.); *De* = of (gen.). In Spanish the adjective follows the substantive, and there is no difficulty in comprehending that *Rio Colorado* means red river; *Rio Negro*, black river; *Rio Rápido*, rapid river; *Rio de la Plata*, river of silver; and *Rio Grande del Norte*, great river of the north.

It will sometimes be well to accompany the translation of the name with illustrative remarks. For instance: *Trinidad* (island) was discovered by Columbus on the 31st July, 1498, and received its name in honor of the Holy Trinity. *Dominica* (island) was discovered by Columbus on Sunday, the 3d Nov., 1493, and received its name in consequence (Sunday, *dies dominica*).

Plaza = place, square; *Plazuela* = little square; *Venecia* = Venice; *Venezuela* = little Venice (the discoverer, Ojeda, found on the coast a settlement built upon piles, and where the people went from house to house in boats, and for this reason he called the place Venezuela). *Patagonia* = land of the large feet: so named

by Magellan and his companions from the large-footed men (*Patagones*) found there. *Angostura* = strait, narrow channel: a city on the Orinoco, at a point where the river is very narrow. The name is now changed to *Ciudad Bolivar*, or City of Bolivar, in honor of the Liberator. Even the formidable Mexican words will be divested of their terrors by a little intelligent study. *Tepetl* = mount; *Cihuatl* = wife; *Citlalin* = star; *Iztac* = white; *Pópoca* = smoking. *Citlaltepetl* is, therefore, star mountain; *Pópocatepetl*, smoking mountain (volcano); and *Iztaccihuatl*, white wife. This last is an appellation every way similar to that of the Swiss mountain, the *Jungfrau*, so called from its white, shining appearance, as of a white-robed nun, by the side of its dark neighbor, the *Mönch* (monk).

So understood, the name *Iztaccihuatl* loses its uncouthness. *Méxitli* (*Méjitli*) was the name of the Mexican god of war, and *Mexico* signifies the city of the god of war. *Máxatl* = deer; *Mazatlan* = place of deer; *Zácatl* = straw of Indian corn; *Zacatlan* (now *Zacatecus*) = place of corn-straw; *Quáhuitl* = tree, wood; *Tēma* = put down. Of these two words are formed *Quatemalli* = pile of wood; and *Quatemallan* (now *Guatemala*) = place of pile of wood.

We have thus far given a number of general explanations as to the origin of geographical names in different countries. Very many more would occur in the study of any one country, and the consideration of the names in the place next at hand will show that there are some which are natural and self-evident, others that admit of an interpretation more or less easy, and others again, the origin and meaning of which are lost in obscurity. All this will be illustrated in German schools by examples

taken from Germany, in English and American schools by English examples, and the whole made clearer by comparison with instances taken from other countries and languages.

Names of cities and towns of later origin often relate to accidents, or relations, of the geological surface, or to some more or less remarkable natural feature, such as: springs, creeks, water, rapids, ford, mouth, harbor, land, plain, height, hill, mountain, stone, and rock.

From the word *spring* are: *Warmbrunn* (Silesia); *Hot Springs* (Arkansas); *Teplitz*, warm spring (Bohemia); *Tiflis*, warm spring (Trans-Caucasia); *Thermopylae*, gate, or pass, of the warm springs (Greece); *Bloemfontein*, flower-spring (Orange Free State).

From *creek*, *water*, and *rapids*: *Reichenbach*, great creek (Saxony); *Stillwater* (Minnesota); *Grand Rapids* (Michigan).

From the word *ford*: *Schweinfurth* and *Ochsenfurth* = Hogford and Oxford (Bavaria), *Oxford* (England), *Waterford* (Ireland), *Hartford* (Connecticut), *Rockford* (Illinois).

From *harbor* and *river-mouth*: *Weichselmünde* = mouth of the Vistula (Prussia), *New Haven* (Connecticut), *Newport* (Rhode Island), *Lockport* (New York), *Porto* = port (Portugal), *Puerto Rico* = rich port (West Indies), *Porto Alegre* = happy harbor (Brazil), *Port Natal* = Christmas harbor (South Africa), *Puerto Principe* = prince's port (Cuba), *Port au Prince* = prince's port (Hayti), *Le Havre* = the harbor (France), *Kjöbenhavn* = trade harbor (Denmark), *Bender Abbassî* (Gombroon) = port of Abbas (Persia).

From *land* and *field*: *Friedland* = land of peace

(Prussia), *Portland* (Maine), *Springfield* (Massachusetts, Illinois, etc.).

From *height, hill, mountain, stone, rock*: *Wilhelmshöhe* = William's height (Cassel, in Hesse), *Freiberg* = free mount (Saxony), *Chapel Hill* (North Carolina), *Little Rock* (Arkansas), *Gold Hill* (Nevada), *Tyre* = rock (now Sûr, in Syria).

There are classes of names which refer to the presence and the action of man upon the earth. Such are the names embodying the words *church* (and *minster*), *castle*, *market*, *city*, and the like. We have, for instance, from the word *church*: *Fünfkirchen* = five churches (Hungary), *New Westminster* (British America), and many others.

From *castle*: *Neuburg* = new castle (Bavaria), *Newcastle* (England), *Weissenburg* = white castle (Alsace), *Belgrad* = white castle (Servia), *Temesvar* = castle on the Temes (Hungary), *Tashkent* = stone castle (Russian Turkestan), *Newburg* (New York).

From *market*: *Newmarket* (England), and the German form *Neumarkt* (Bavaria).

From *city, town*, and their equivalents: *Neustadt* = new city (in many parts of Germany), *Naples* (from *Neapolis* = new city, in Italy), *Cirta* = city (now *Constantine*, Algeria), *Novgorod* = new city (Russia), *Carthage* = new city (North Africa), *Arizona City* (now *Yuma*), *Iowa City*, *Jersey City*, *Kansas City*, *Nebraska City*, *Virginia City*, *Great Salt Lake City*, *Middletown* (Connecticut, and other American States), *Freetown* (Sierra Leona), *Cape Town* (Cape Colony), *Irkutsk* = city on the Irkut, *Yakutsk*, *Yeniseik*, *Tobolsk*, *Nicolaievsk* = city of Nicholas (these five in Siberia), *Singapore* = city of lions, *Nagpore* = city of serpents, *Allahabad* = city of God, *Hyderabad* = city of Hyder (these in India).

Many places take their names from men and women. Such are: *Königsberg* = king's mountain (Prussia), *Kingston* (Jamaica), *Charlestown* (Massachusetts), *Elizabethtown* (New Jersey), *Georgetown* (British Guiana), *Lewiston* (Maine), *Louisville* (Kentucky), *St. Louis* (Missouri), *Washington* (frequent in the United States), *Adelaide* (South Australia), *Alessandria* (Italy), *Alexandria* (Egypt), *Iskanderun* = city of Alexander (Syria), *Yarkand* = place of friends (Chinese Turkistan).

Examples of names derived from animals are: *Heringsdorf* = village of herrings (Usedom Island, Prussia), *Buffalo* (New York), *Mazatlan* = place of deer (Mexico).

From plants there are many like the following: *Weingarten* = vineyard (Württemberg), *Oakland* (California), *Olynthus* = place of figs (pen. Chalcidice), *Leipzig* (Lipsk) = place of lime trees (Saxony), *Cracow* = city of bushes (Galicia), *Zacatecas* = city of corn-straw (Mexico).

We find also names taken from minerals: *Silberberg* = silver mountain (Silesia), *Salzburg* = salt castle (Austria), *Carbon* (Wyoming), *Esmeralda* = emerald (Venezuela), *Diamantino* and *Diamantina* (Brazil), etc.

In treating the subjects of physical and mathematical geography, the names and words, even though very familiar, should not be passed over without an explanation made at the moment. It should be shown, for instance, that the Russian *step* (*steppe*) means a wilderness, or grassy plain, like those of Northern Asia and South-western Russia. So *pustina*, a Slavic word, means *desert*, and from this word the *pusztas* in Hungary are named. *Llano* (Spanish) means *flat*, and hence the *llanos*, the

treeless plains on the Orinoco. From the Spanish *sábana* a *sheet*, and figuratively a wide plain, comes the term *savanna*, a grassy plain. The French *prairie*, adopted in English for the prairies of North America, means a *meadow*. *Pampa*, a Quichua word, means a *plain*, and is so applied in the Argentine Republic.

From the Spanish *mula* (Latin *mulus*) we have the word *mulatto*, properly a hybrid; from the Latin *mixtus*, and derivatives, the Spanish *mestizo*, meaning mixed white and Indian blood; and the word *zambo*, the name of an ugly South American dog with a horse-like head, is applied to a person of mingled negro and Indian race. The Spanish word *criollo* (English *creole*) is often improperly used; it means rightly an American born of European (Spanish, Portuguese, or other) parentage.

The Greek *σφαῖρα* (Latin *sphaera*) means a *ball*, *sphere*, and *ἡμὶ half*. From these we have the word *hemisphere* for half the globe; and we speak of the eastern and the western, the northern and the southern hemispheres.

From the Latin *globus*, a *globe*, and *planus*, *flat* or *plain*, is formed the compound *planiglobe*, which is applied by some to a representation of the hemisphere on a flat surface. In like manner the English word *spheroid*, meaning a globe flattened at the poles, is formed from the Greek *σφαίροειδής* = globe-like, having the form of a globe.

The Latin verb *rotare*, to *turn like a wheel*, gives us the word *rotation*, the movement of the earth on its axis; and the verb *revolvere*, to *turn again*, to *revolve*, with the noun *revolutio*, gives us the meaning of the *revolution* of the earth; its motion, that is, around the sun.

Still further :

Πούς = foot, *ποδός* (gen.) = of the foot, *περί* = round, or about, *ἀντί* = opposite.

From these words we have : 1. *Περίοικοι*, *Periecians*, those who dwell around, meaning the people who live on the same parallel of latitude, but on opposite sides of the globe. The people of Zacatecas in Mexico and those of Bhopal in Central India are periecians to each other.

2. *Ἀντίοικοι*, *Anteciens*, meaning those who live on the same meridian in corresponding degrees of northern and southern latitude. The Japanese of Meaco (Kioto) and the Australians of Adelaide are anteciens.

3. *Ἀντίποδες*, antipodes, those who live in such relative positions on the globe that a diameter might be drawn from under the feet of the one people to the feet of the other. The inhabitants of Salamanca in Spain, and those of Wellington in New Zealand are the antipodes of each other.

The foregoing examples sufficiently show how, by applying to the rich field of geographical nomenclature a method of intelligent explanation, the teacher may give to the study a most lively interest.

The interpretation of names will offer occasion for suggestive comparisons. The words *ocean* and *sea*, for instance, have for their equivalents in other tongues *welt-meer*, *pontus*, *meer*, *see*, *zee*, *more*, *hai*, etc.; an *island* is *insel*, *isola*, *ilha*, *isla*, *île*, *ö*, *holm*, *jesira*; a *mountain* is *mons*, *monte*, *mont*, *berg*, *pen*, *jebel*, *thabor*, *tepetl*; a *city* is *stadt*, *città*, *ville*, *stad*, *ciudad*, *gorod*, *abad*, *cité*, *pura* (Singapura); and *New City*, or *New Town*, is *Napoli*, *Nystad*, *Villeneuve*, *Novgorod*, *Carthage*, etc.

There should be a generally recognized system of

orthography for geographical names. Why should we write *Cambodia*, *Camboja*, *Kambodja*, *Cambodge*? It were surely better to agree upon one form.*

In the absence of such a system it will always be necessary, in treating the geography of a country, to establish rules for the pronunciation of the native names. With Italy, for example, the teacher will give the simple rules.† The vowel sounds are known; consonants, much as in English, but *c* is to be sounded like *k*, except before *e* and *i*, when it has the sound of *ch* in *charm*, so that *cio* is sounded *cho*, and *cia*, *cha*.

Che and *chi*, Italian, are sounded *ke* and *ki*.

The case is similar with the letter *g*; and all these combinations should be written on the blackboard and copied by the scholars: *k* sound: *ca*, *che*, *chi*, *co* *cu*; *ch* sound: *cia*, *ce*, *ci*, *cio*, *ciu*; *g*, as in *get*: *ga*, *ghe*, *ghi*, *go*, *gu*; *g*, as in *gem*: *gia*, *ge*, *gi*, *gio*, *giu*; *gl* is pronounced like *li* in *pavilion*, and *gn* like *ni* in *union*; *j* is not a consonant in Italian, and is sounded always like a long *i*; *cc* (before *e* and *i*) is a combination where the first *c* has the sound of *t*. In *zz* the first letter has the sound of *t*; the second that of *s*.

The pupil will now be able to pronounce for himself, any of the following names: *Cremona*, *Capri*, *Ischia*, *Chiavenna*, *Como*, *Custoza*, *Vercelli*, *Ticino*, *Mincio*, *Ajaccio*, *Gran Sasso*, *Lago di Como*, *Adige*, *Lago Maggiore*, *Reggio*, *Cagliari*, *Legnano*, *Scirocco* (the hot wind), *Livorno*, *Pavia*, *Verona*.

With very little aid from the teacher, the scholar will

* The Royal Geographical Society, of London, has made a beginning towards reformation in this matter.

† See note at the end.

be delighted to find that he can master the sound of almost any Italian name.

The proper pronunciation of French words* is more difficult than that of Italian, Spanish, or Portuguese, and yet even pupils that are unacquainted with the French language may be brought to pronounce fairly well the names met with in French geography. The rules for guidance should be given by the teacher in a simplified form from any good French grammar, and copied by the pupils from the blackboard.

Correct recitation of the forms and frequent repetition in reading the names are of great importance.

The scholars, made familiar in this way with the apparently lawless combinations in French words, will soon perceive that, so far from being arbitrary, these combinations are the result of settled laws.

There is no very great difficulty with regard to the geographical names of the other European countries, and it must be noted that European names are found in great numbers in many parts of the world outside of Europe.

Particular and carefully marked accents should be used to impress upon the learner the correct pronunciation. This is a point of capital importance, since the knowledge of the pronunciation fixes the word in the mind.

In filling up the design of a method for facilitating and enlivening the study of geography by explanation of the names—such as the method now offered, if it recommend itself,—it would be of service to provide for a survey and review of the teacher's work by the pupils. In this way the facts, made fresher by repetition, would be more deeply impressed upon the memory. It is a question for

* See note on page 381.

consideration whether it would be more advisable to explain all the names belonging to any one language, wherever found, or to treat thoroughly those of one country at a time.

In either case there is some danger of going too far, and so losing sight of the principal object.

The order to be followed is to begin with those European countries which have played a leading part in history, ancient, mediæval, and modern.

The Balkan Peninsula takes, therefore, the first place, with its important Greek names. These should be written down (especially in the beginning) in the Greek characters, and below these their Latin equivalents. The diligent pupil will soon acquire the knowledge of the Greek alphabet, and be able to read the names as written on the board and pronounced by the teacher.

Then will follow Italy, the Iberian Peninsula, France, Great Britain and Ireland, Scandinavia, Russia and the Slavic countries, Hungary, Germany, and the Netherlands. After these will come Asia, Africa, Australia, and Oceania, South and Central America, Mexico, and the West India Islands. British America ought to precede the United States, since the latter would naturally concentrate the chief attention of Americans.

The explanations of physical and mathematical geography would form the conclusion.

The rules for pronunciation should be given as each European country is taken up. For other parts of the world reference should be made to what has been already written.

This would complete a sufficient "guide" for the different higher schools, and a most useful supplement to every school geography.

The teacher, after pointing out in the various parts of the world the words derived from any one language, might call upon one of the foremost pupils to draw up a systematic table of names belonging to some widely spread language, such as Arabic, Spanish, Portuguese, or English. This would familiarize the scholars with the lessons already learned, and with many important facts of history.

The principle of facilitating the study of geography is one never to be lost sight of, and the first explanations must, therefore, be made in a simple way, as already indicated.

In the "guide" given to the pupil the separate names, with their translations, will be printed in the order already given, and after these, in larger type, the compound names with the translations. A note, when necessary, should be in parenthesis, and the derivation of a name from a distinguished person or from a particular incident should be given in smaller type.

Names explained in different ways, or the meaning of which is in dispute, should be excluded.

In special cases the pronunciation deduced from the rules given should be added in a parenthesis. In words liable to be wrongly accentuated, the right syllable should be marked.

These distinctions will be made clear by the use of type of different sizes.

This detailed outline of a plan for the explanation of geographical names, a subject in itself of the highest interest, has been elaborated by the writer under the entire conviction of the value and usefulness of some such system. It will, as he believes, draw teachers and scholars

more closely together in their common pursuit, by relieving the mind of a burden of dead sounds and replacing these with living and significant terms. It cannot but contribute to exalt the dignity and widen the scope of geographical study, and it must add largely to the advances made in this branch of education within the last few decades.

NOTE.—In the *foreign geographical names*

<i>a</i> sounds like <i>a</i> in <i>father</i> = <i>ā</i> (a long), or			
	" <i>a</i> in <i>fat</i> = <i>ă</i> , <i>â</i> (a short) ;		
<i>e</i> "	" <i>a</i> in <i>fate</i> = <i>ē</i> , or		
	" <i>e</i> in <i>met</i> = <i>é</i> , <i>ê</i> ;		
<i>i</i> "	" <i>i</i> in <i>marine</i> = <i>ī</i> , or		
	" <i>i</i> in <i>pin</i> = <i>î</i> , <i>ï</i> ;		
<i>o</i> "	" <i>o</i> in <i>note</i> = <i>ō</i> , or		
	" <i>o</i> in <i>not</i> = <i>ô</i> , <i>ò</i> ;		
<i>u</i> "	" <i>oo</i> in <i>room</i> = <i>ū</i> , or		
	" <i>u</i> in <i>bullet</i> = <i>û</i> , <i>ü</i> .		
<i>ā</i> : Montāna	Santiāgo	<i>ī</i> : Middletown	Quŕto
<i>ă</i> : Chārlleston	Carācas	<i>ô</i> : Dākōta	Bōgotā
<i>ē</i> : Édinburgh	Montevideō	<i>ô</i> : Rōckford	Orinōco
<i>é</i> : Frēdericksburg	Cayénne	<i>û</i> : (Liverpool)	Angostūra
<i>î</i> : (Greendale)	Līma	<i>û</i> : Lake Sūpērior	Acapulco

In the *Italian language* *a* sounds like *a* in *father* (*ā*), or like *a* in *fat* (*ă*) ; *e* = *a* in *fate* (*ē*), or *e* in *met* (*é*) ; *i* = *i* in *marine* (*ī*), or *i* in *pin* (*î*) ; *o* = *o* in *note* (*ō*), or *o* in *not* (*ô*) ; *u* = *oo* in *room* (*ū*), or *u* in *bullet* (*û*) ; * *j* = *y*.

ā : Carrāra ; *ă* : Mālta ; *ē* : Spolēto ; *é* : Palérmo ; *ī* : Torīno ; *î* : Brīndisi ; *ô* : Ancōna ; *ô* : Campo Fōrmio ; *û* : Siracūsa ; *û* : Abrūzzo ; * *j* : Pistōja.

In the *French language*—1. *â* = *ā* (like *a* in *father*). 2. *é* = *é* (like *a* in *fate*). 3. *è* = *ē* (like *e* in *met*). 4. *ô* = *ō* (like *o* in *note*). 5. *u* = *ū* (German *ü* in Müller, *u* in the French word *parapluie*). 6. *ai*, *ay* = *ē* (like *a* in *fate*). 7. *au*, *eau* = *ō* (like *o* in *note*). 8. *oi* = *ōā*. 9. *ou* = *ū* (like *oo* in *room*). 10. *c* before *e* and *i*, *ç* before *a*, *o*, and *u* = *ss* (sharp), otherwise *k*. 11. *ch* = *sh* (sharp). 12. *g* before *e* and *i* = *zh*, otherwise like *g* in *girl*. 13. *j* = *zh*. 14. *v* = Latin *v*, German *w*. 15. *gn* = *ni* in *onion*. 16. *c*, *d*, *e*, *e*, *g*, *r*, *s*, *t*, *x* are mute at the end of the syllables. 17. The baptismal name of John sounds in the French language : *zhā* (Jean), *an*, *en* = *ā* ; the French have further the *nasal sounds* of (18) [see Grammar for nasal *en* and *in*], (19) *ō* (*on*), and (20) [see Grammar for nasal *un*].

1. *Chalōns* (*shālō*). 2. *Sèvres* (*sēv'r*). 3. *Dauphiné* (*dofiné*). 4. *Saône* (*sōn*). 5. *Durance* (*dūrāss*). 6. *Calais* (*calē*), *Cambray* (*cābrē*). 7. *Bordeaux* (*bordō*). 8. *Loire* (*lōār*). 9. *Toulouse* (*tulūs*), *Tours* (*tūr*). 10. *The Cevennes*, *Besançon*

382 *How to Enliven Geographical Instruction.*

(bezässö), *Clermont* (clermö). 11. *Chamouni* (shamuni), *La Rochelle* (la roshell). 12. *Gironde* (zhiröd), *Garonne* (garon). 13. *Anjou* ([nasal an]zhu), *dijon* (dizhō). 14. *Le Havre* (le häv'r). 15. *Champagne* (shāpanyi). 16. *Mont Blanc* (mō blā), *Saint Cloud* (s[nasal in] clū), *Marne* (marn), *Seine* (sēn), *Bayonne* (bayónn), *Marseille* (marsëy), *Narbonne* (narbónn), *Nîmes* (nīm), *Versailles* (versäy), *Cherbourg* (sherbūr), *Montpellier* (mōpellîē), *Saint Denis* (s[nasal in] déni), *Poitiers* (póatiē), *Belfort* (bêfōr). 17. *La Manche* (la māsh), *Lorient* (loriā), *Le Mans* (le mā), *Nantes* (nāt), *Rouen* (ruā), *Sedan* (sedā). 18. *Saint Quentin* (s[nasal in] kã t[nasal in]). 19. *Avignon* (aviniō), *Lyon* (liō), *Toulon* (tulō). 20. *Verdun* (verd[nasal un]).

A YEAR AMONG THE ESKIMO.

BY

DR. FR. BOAS.

If I undertake to describe some of my Arctic experiences I cannot entertain you with exciting adventures, such as shipwrecks and narrow escapes, for such were not my share. My narrative must be that of the daily life of the inhabitants of these ice-bound coasts, the Eskimo. They were my companions in all my journeys. I used to travel from village to village, and thus their fortunes were my fortune. The little adventures of their life were my adventures, and I hope what my description may seem to be wanting in exciting scenes and imminent dangers will be made good by the fact that my experiences are those of a whole people, that my difficulties and dangers were such as the Eskimo have to brave and to struggle with throughout their lives.

When our ship first approached the gloomy shores of Baffin Land—one of the large islands forming the Arctic archipelago—the Eskimo descried us, manned a boat, and boarded our schooner. Little did I think that within a short time I should look at yon little filthy fellow, with long hair and sparkling eyes, with feelings of hearty interest, not to say friendship; little did I think how warmly they would welcome me in their small huts.

After a few days the ship left us, and I was alone with my servant among the Eskimo. I think it is unnecessary

to describe their low statures and flat faces; their neatly finished skin dresses, and the long-tailed jackets of the women, who carry their children about in the huge hoods of their jackets, or in their wide boots, which reach to the hips. Neither will I speak about their swift craft, the kayak, which they skilfully manage with the double-bladed paddle.

September and the first days of October were spent with brief excursions in the neighborhood of the place where I had landed, for it was too late in the season to undertake extensive journeys. The brown slopes of the mountains began to be covered again with a white coat of snow, and ice was forming in the bays. Only a few weeks more and gales were raging over the sea; ice was forming rapidly, and winter had come. The Eskimo had built snow huts and stone houses, which were covered with shrubs and turf. Large lamps were burning inside, affording light and heat. The ice-floes had consolidated under the shelter of the land, and the men went out every day to hunt seals at the edge of the floe. There they stood waiting for a seal to rise. As soon as the hunter sees it the harpoon is thrown, and the carcass drawn upon the ice. The hunters must watch the state of the weather; for if a sudden gale blowing from the land should arise, the ice is liable to break, and to be carried into the sea. I recollect a young man who was thus cut off from the land, and found himself unable to return to the coast. For eight days he drifted to and fro at the mercy of the winds. Heavy snow-falls covered the drifting ice, the swell broke up the floe, and death stared at him continually. Yet he did not despair, nor even lose his temper, but in mockery of his own misfortune he composed the following song:

Aya: It 's glorious on the ice!
Here it 's nice.
Behold my lonesome path!
All snow and slush and ice!
This is nice.

Aya: It 's glorious on the ice!
Here it 's nice.
Behold my native land!
Its snow and slush and ice!
This is nice.

Aya: Awaking from my slumbers in the dawn,
Monotonous fields of ice
And gloomy lanes of water
I behold.

Aya: O when I reach the land
It will be nice!
When will this roaming end?
When will I be at home?
Then it 's nice!

As it grew colder the floe grew more extensive, and about the beginning of December the sea was sufficiently frozen over for travelling. This is the time of the year when the natives visit one another, and therefore it was the most favorable season for my travels and explorations. I had purchased a sledge and dogs, and in the beginning of winter made short excursions in order to learn how to drive a sledge. In December I started on my first journey, and henceforth until about the end of July I was continually moving about, surveying the coasts and the interior of Baffin Land.

I used to stay in the Eskimo villages and to survey the neighborhood. As soon as this work was finished, I proceeded to the next village, and thus worked my way all along the coast. In the villages I lived with the Eskimo in their snow-houses. Generally I proposed to a man who

was well acquainted with the country to join me for a few days, and as I had better dogs and a better sledge than the Eskimo, my offer was gladly accepted. Such trips lasted generally about a fortnight, and during that time the man went sealing while I was surveying.

I shall describe one day of such travels, as this will convey a fair idea of the out-door life of the Eskimo in winter.

Early in the morning the woman cooked the breakfast, while the man prepared the sledge. The latter consists simply of low runners connected by a number of cross-bars. When in use, the bottom of the runners is covered with a coating of ice, that the sledge may glide more smoothly over the snow. The load consisted of our sleeping-bags, my astronomical instruments, our hunting gear, snow-knives, a lamp, and a lump of seal meat and blubber. After this light load was secured by lashing, the dogs were harnessed up and put into the sledge. Now we were ready to start. On the first day of a journey the dogs are generally well rested, and then it is difficult to keep them back until all is ready. As soon as the driver cries "H!" off they go down the snow-banks, down over boulders of ice that are piled up on the shore. The sledge bounces over all obstacles, and it requires all the strength and attention of the traveller to hold to it and to keep clear of projecting rocks and pieces of ice.

When the sledge gets to the unbroken floe which covers the sea, the harnesses and traces of the dogs must be looked after before the party is ready to proceed. When all is in good order, the travellers sit down on the sledge, the driver in the front part; he takes up the whip, which is about twenty-five feet long, and off they go.

It is very pleasant to ride on a light sledge drawn by good dogs, when the ice is level and the snow hard. Under such circumstances one can easily accomplish about seventy miles in a day's drive. But even then driving is a hard work and requires considerable skill and attention. After a short while one or the other of the dogs will get lazy. Then the driver calls out his name and lashes him; but it is necessary to hit the dog called, for if another is struck, he feels wronged and will turn upon the dog whose name has been called; the leader, who will not allow any fighting among his dogs, enters into the quarrel, and soon the whole pack is huddled up in one howling and biting mass, and no amount of lashing and beating will separate the fighting animals. The only thing one can do is to wait until their wrath has abated, and then to clear the traces, which have become so entangled that they must be restrung.

But caution is necessary in doing so. The dogs are made to lie down by lashing their heads gently. While the traces are being strung, the leader looks back cunningly, and as soon as all is ready he jumps to his feet, all other dogs follow him, and away they go before the driver can fairly get hold of the sledge. Or, if one succeeds in that, the whip and mittens will remain behind, and it is necessary to drive back in a wide circle in order to recover them.

Before I was acquainted with all the peculiarities of the dogs, I frequently spoke to my companion, asking him the names of promontories, bays, islands, etc. While we were talking the dogs turned round and all of a sudden sat down, facing us as though they wanted to know what we were talking about. They absolutely allow no con-

versation between the travellers, but one has always to speak to them. The driver will say: "*Aq aq*—now run, now run! Ah! do you see yon island, yon little island? There is a house on it, a nice little house! Now run!" and so on. If he wants to turn to the right, he throws his whip to the left and sings out: "*Aua, ja aua, au aua*," and as long as he continues to do so, the dogs turn more and more to the right. If it is very cold, one has to run now and then by the side of the sledge, in order to keep warm, and thus one is fairly tired out when it is time to stop and to make a camp.

The first thing to be done is to build a snow-house. Snow blocks are cut with a knife or a dove-tail saw and then arranged so as to form a vault. Of course, such a house, which is built for a single night only, is very small, but nevertheless it takes about two hours to finish it. Then the fire is lighted and some snow is melted. While one of the men is engaged in this work, the other unharnesses the dogs and takes the harnesses into the house. The sledge is unloaded and every thing carried into the hut, as else the dogs would devour it. It takes about four hours until the travellers are ready for their meal, which invariably consists of raw, frozen seal meat and water. As I was provided with better cooking accommodations than the Eskimo have, we were able to cook coffee or soup, and this was a great attraction for the Eskimo when travelling with me. The clothing is not taken off during the night, but kept on until a longer stay is made. These snow-huts do not get very warm during a single night, when the glass is 40° or 50° below zero, though the door is sealed with a snow-block and the lamp is kept burning all night. Therefore the nights are rather

uncomfortable, particularly as the houses are so small that one cannot sit with extended legs. I was generally glad to get under way again in the next morning and to pursue my journey.

I described here the travelling over smooth ice and over hard snow. When the traveller has to pass fields of rough ice, and when deep and soft snow obstructs the way, travelling is even more laborious. The driver has to go on the right side of the sledge, and to push it on, and to steer it past the boulders of ice with the whole of his strength. He must stimulate the dogs continually; and nevertheless they will sit down every few minutes and look piteously at their master, as though they wanted to say: "We cannot do any more." When sudden snow-falls overtake travelling parties, their lives are even sometimes endangered. Seals do not frequent the broken floes, and besides, the snow conceals their breathing-holes. In winter we were overtaken by an occurrence of this kind. Our party consisted of three, an Eskimo, my servant, and myself. As it was my very first trip we did not know much about travelling. When about twenty-five miles distant from the settlement I intended to visit, a snowfall set in which covered the ice with from two to four feet of snow. Our dogs were absolutely unable to move on, and so we had to leave behind sledge, dogs, and every thing, and to make our way to the settlement on foot. After a laborious march of about three miles, fog set in, we struck a floe of rough ice, and ere long we had lost our way. The compass was of no use, as I did not know the position of the place. Fortunately, after a few hours, the moon made her appearance and the fog lifted. But only after a march of thirty hours at a temperature of

48° below zero, and all the time travelling over rough ice, and for many hours through deep snow, did we succeed in finding the village. My unfortunate servant had frozen his feet, and had to stay in that place for several months.

It was at this time that I learned to know Eskimo hospitality. When we entered the hut my new friend was eager to help us to throw off our clothing, and we were given a warm bed. While we were asleep a seal was cut, though, in consequence of the bad weather, provisions were scanty; and a hearty meal was cooked, which was served to us as soon as we awoke. Meanwhile the "lady of the house" had dried our clothing and was busy mending it. In short, we were made as comfortable as possible. In the evening all were assembled in our home, some sitting on the ledge, some squatting or standing on the floor, eager to hear of our misfortune. During the night a gale was blowing, which hardened the snow; and therefore several men set out the next morning to fetch our provisions and our dogs. Such are the incidents and difficulties of winter travelling; but it is agreeable and pleasant as compared to sledging in summer. Then the ice is covered with water to a depth of three or four feet. The traveller has to wade through this ice-cold lake, and he must be careful to avoid the large whirlpools which form over each seal hole, and the rapid streams which gush down the cracks that cross the floe in every direction. And all is glaring in a bright blue and white, which hurts the eyes and causes snow-blindness.

But I will return to my winter journeys. I said before that while I was surveying the Eskimo used to go seal-ing. The hunting of seals is a very tiresome and disa-

greeable work in winter. The seals scratch holes through the ice, in which they rise to breathe. The dogs scent these holes, and when one is found, the hunter waits by its side until he hears the breathing animal. Sometimes he will stand there motionless for a whole day, the harpoon in his right hand, the harpoon line coiled up over his left arm. As soon as he hears the animal he throws the harpoon vertically downward.

In spring another method of hunting is used. At this season the seals crawl upon the ice and lie by the side of their holes, sleeping and basking. Every now and then the cautious animal raises its head and looks around to ascertain whether somebody is approaching. The Eskimo, who wear seal-skin clothing at this time of the year, lie down on the ice and creep up to the seal. When the animal looks up they will lie down and imitate its movements. When it lies down again they approach it cautiously. At last they get near enough to strike it with the harpoon.

In the beginning of winter I had occasion to see one of the great festivals of these Eskimo, which is of more than common interest, as it is closely connected with their religious ideas. When late in the fall storms rage over the land, and again release the sea from its icy fetters; when the floes are pressed one against another and piled up in wild disorder, the Eskimo believes he hears the voices of the spirits which inhabit the mischief-laden air. They beleaguer the villages and bring sickness and death, bad weather and failure in hunting. The worst of these spirits are Sedna, mistress of the under-world, and her father, to whom the dead Eskimo fall.

The old legends which mothers relate during the long

winter nights to their timidly listening children, tell of Sedna: Once upon a time there lived a man with his daughter Sedna on a lonely place. His wife had been dead for a long time, and the two led a quiet life. Sedna grew up to be a beautiful girl, and the young men came in from all around to sue for her hand, but none of them could win her proud heart. One spring-time, when the ice had broken up, a fulmar flew from over the sea and wooed Sedna with enticing song. "Come to me," he said, "come into the land of the birds, where there is never any hunger. My tent is made of beautiful bird-skins; my brethren, the fulmars, shall bring you all your heart may desire; their feathers will clothe you; your lamp shall always be filled with oil, your pot with meat." Sedna could not resist such wooing, and they went together into the land of the birds. When at last they reached the country of the bird, after a long journey, Sedna discovered that her spouse had shamefully deceived her. Her tent was covered with wretched fish-skins, full of holes, that gave free entrance to the wind and snow. Instead of white reindeer-skins, her bed was made of hard walrus-hides; and she had to live on miserable fish which the birds brought her. Too soon she discovered that she had thrown her fortune away when, in her foolish pride, she had rejected the Eskimo youth. In her woe she sang:

"Aya! O father, if you knew how wretched I am, you would come to me, and we would hurry away in your boat over the waters. The birds look unkindly upon me, the stranger. The cold winds roar around my bed; they give me miserable food—oh, come and take me back home! Aya."

When a year had passed, and the sea was again stirred with warmer winds, the father left his land to visit Sedna. The daughter greeted him joyfully, and besought him to take her back home. The father pitying his daughter took her in his boat while the birds were out hunting, and they quickly left the country which had brought so much sorrow to Sedna. When the fulmar came home in the evening and found his wife not there, he got very angry. He called his fellows around him, and they all flew away in search of the fugitives. They soon discerned them and stirred up a great storm. The sea rose in immense waves, that threatened the pair with destruction. In his mortal peril the father determined to offer Sedna up to the birds, and threw her overboard. She clung with a death-grip to the edge of the boat. The cruel father then took a knife and cut off the first joints of her fingers. Falling into the sea they were transformed into seals. Sedna clung to the boat more tightly, the second finger-joints fell under the sharp knife, and swam away as ground-seals; when the father cut off the stumps of the fingers, they became whales.

In the meantime the storm had subsided, for the fulmars thought Sedna was drowned. The father then allowed her to come into the boat again. But she from that time cherished a deadly hatred against him, and swore bitter revenge. After they got ashore, she commanded her dogs to gnaw off the feet and hands of her father while he was asleep. Upon this he cursed himself, his daughter, and the dogs who had maimed him; then the earth opened and swallowed hut, father, daughter, and dogs. They have since lived in the land of Adlivun, of which Sedna is the mistress.

The seals, ground-seals, and whales, which grew from Sedna's fingers, increased rapidly, and soon filled all the waters, affording choice food to the Eskimo. But since then Sedna hates them as they hunt and kill the creatures which have arisen from her flesh and blood. Her father, who can only move by creeping, appears to the dying; and the wizards often see his crippled hand seizing and taking away the dead. The dead have to stay a year in Sedna's dismal abode. Two large dogs lie on the threshold, and only move aside to let the dead enter. It is dark and cold inside. No bed of reindeer-skins invites to rest, but the new-comer has to lie on hard walrus-hides. Only those who have been good and brave on the earth escape Sedna, and lead happy lives in the upper land of Kudlivun. This land is full of reindeer; it is never cold there, and snow and ice never visit it. Those, also, who have died a violent death, may go into the fields of the blessed. But whoever has been with Sedna must always stay in the land of Adlivun, and hunt whales and walrus. With all the other evil spirits, Sedna lingers in the fall among the Eskimo. But while the others fill the air and the water, she rises from under the ground. It is then a busy season for the wizards. In every hut we may hear singing and praying, and conjuring the spirits is going on in every house. The lamps burn low. The wizard sits in a mystic gloom in the rear of the hut. He has thrown off his outer coat, and drawn the hood of his inner garment over his head. Muttering indistinguishable words, he shakes his hands feverishly. He utters sounds which it is hard to ascribe to a human voice. At last his guardian spirit responds to the invocation. The priest lies in a trance, and when he comes to himself he

promises, in incoherent phrases, the help of the good spirits.

The hardest task, that of driving away Sedna, is reserved for the most powerful wizards. A rope is coiled on the floor of a large hut, in such a manner as to leave a small opening at the top, which represents the breathing-hole of a seal. Two wizards stand by the side of it, one of them holding the seal spear in his hand as if he were watching at the seal hole in the winter, the other holding the harpoon-line. Another priest sits in the rear of the hut, whose office it is to lure Sedna up with magic song. At last she comes up through the hard rocks, and the men hear her heavy breathing; now she emerges from the ground, and meets the wizards waiting at the hole. She is harpooned, and sinks away in angry haste, drawing after her the harpoon, to which the two men hold with all their strength. Only by a desperate effort does she tear herself away from it and return to her dwelling in Adlivun. Nothing is left with the two men but the blood-sprinkled harpoon, which they proudly show.

Sedna and the other evil spirits are at last driven away, and a great festival for young and old is celebrated on the next day in honor of the event. But they must still be careful, for the wounded Sedna is greatly enraged, and will seize any one whom she can find outside of his hut. So, on that day, they all wear protecting amulets on the tops of their hoods.

The men assemble early in the middle of the settlement. As soon as they have all got together, they run screaming and jumping around the houses, following the course of the sun. The circuit made, they visit every hut, where the woman must be waiting for them. When she hears the

noise of the band, she comes out and throws a dish of little gifts of meat, ivory trinkets, and articles of seal-skin into the yelling crowd, of which each one helps himself to what he can get. No hut is spared in this round.

The men next divide into two parties: the ptarmigans, those who were born in the winter; and the ducks, or the children of summer. A large thong of seal-skin is stretched out. Each party takes hold of one end and tries with all its might to drag the opposite party over to its side. If the ptarmigans give way, then the summer has won the game, and fine weather may be expected to prevail during the coming months.

The contest of the seasons having been decided, the women bring out a large kettle of water and each person gets his drinking cup. The company stand close around the kettle, while the oldest man steps out first among them. He dips a cup of water from the vessel, sprinkles a few drops on the ground, turns his face towards the home of his youth, and states his name and that of the place where he was born. He is followed by all the other inhabitants of the village, down to the youngest children, who are represented by their mothers. As the words of the old are listened to respectfully, those of distinguished hunters are received with demonstrative applause.

Now arises a cry of surprise, and all eyes are turned toward a hut out of which stalk two gigantic figures. They wear heavy boots: their legs are swelled out to a wonderful thickness by several pairs of breeches, their shoulders are covered with a woman's jacket, and their faces with a hideous mask of seal-skin. In their right hands they carry the harpoon, on their backs inflated buoys of seal-skin, and in their left the scraper with

which skins are prepared. Silently, with long strides, the Kailertetang approach the assembly, who, screaming, press back from before them. The pair solemnly lead the men to a suitable spot, and set them in a row, against which they set the women in an opposite row. They match the men and women in pairs, and these run, pursued by the Kailertetang, to the hut of the woman, where they stay for the following day. Having performed this duty the Kailertetang go down to the shore and invoke the north wind which brings fair weather, while they warn off the unfavorable south wind.

As soon as the incantation is over, all the men attack the Kailertetang with a great noise. They act as if they had weapons in their hands and would kill both the spirits. One pretends to probe them with the spear, another to stab them with a knife; one to cut off their arms and legs, another to beat them unmercifully on the head. The buoy which they carry on their backs is ripped open and collapses, and soon they both lie as if dead beside their broken weapons. The Eskimo leave them to get their drinking-cups, and the Kailertetang awake to new life. Each man pours some water into their buoys, passes a cup to them, and inquires about the future, about the fortunes of hunt and the events of life. The Kailertetang answer in murmurs, which the questioner must interpret for himself.

I told before a tradition of the Eskimo. They are very fond of telling such tales and have an enormous stock of folk-lore, of which I succeeded in collecting a considerable amount. The scene when traditions are told is extremely interesting, and I welcomed such occasions, as nothing can be more instructive to the traveller than to

listen to the songs and legends of the people he studies. The man who relates the tradition strips off his outer jacket and sits down in the rear of the hut facing the wall. He pulls up his hood, puts on his mittens, and prepares himself by a brief song. The audience stand or squat on the floor of the huts, and now the lamps are lowered, a dim light only filling the small room. I shall tell here one of the most characteristic of these stories, as I heard it in a village on Davis Strait.

THE TALE OF QAUDJACDJUQ.

A long time ago there was a poor little orphan boy who had no protector and was maltreated by all the inhabitants of the village. He was not even allowed to sleep in the hut, but lay outside in the cold passage among the dogs, who were his pillows and his quilt. Neither did they give him any meat, but flung old, tough walrus-hide at him, which he was compelled to eat without a knife. Thus he led a miserable life and did not grow at all, but remained poor little Qaudjaqdjuq. He did not even dare to join the play of the other children, as they also maltreated him on account of his weakness.

When the inhabitants of the village assembled for dancing and feasting Qaudjaqdjuq used to lie in the passage and to peep over the threshold. Now and then a man would lift him by the nostrils into the hut and tease him. As he was thus frequently lifted by the nostrils they grew to be very large, though he remained small and weak.

At last the man in the moon, who had seen how badly the men behaved towards Qaudjaqdjuq, came down to help him. He harnessed his dogs to his sledge and drove

down. When near the hut he stopped and cried: "Qaudjaqdjuq, come out!" Qaudjaqdjuq answered: "I will not come, go away!" But when he was asked a second and third time to come out he complied, though he was much frightened. Then the man in the moon went with him to a place where some large boulders were lying about, and, having whipped him, asked: "Do you feel stronger now?" Qaudjaqdjuq answered: "Yes, I feel stronger." "Then lift yon boulder," said he. As Qaudjaqdjuq was not yet able to lift it, he gave him another whipping, and now all of a sudden he began to grow, the feet first becoming of an extraordinary size. Again the man in the moon asked him: "Do you feel stronger now?" Qaudjaqdjuq answered: "Yes, I feel stronger," but as he could not yet lift the stone he was whipped once more, after which he had attained a very great strength and lifted the boulder as though it were a small pebble. The man in the moon said: "That will do. To-morrow morning I shall send three bears; then you may show your strength."

He returned to the moon, but Qaudjaqdjuq, who had now become Qaudjuqdjuq (*i. e.*, the big Qaudjaqdjuq), returned home, tossing the stones with his feet, and making them fly to the right and to the left. At night he lay down again among the dogs to sleep. Next morning he awaited the bears, and, indeed, three large animals soon made their appearance, frightening all the men, who did not dare to leave the huts.

Then Qaudjuqdjuq put on his boots and ran down to the ice. The men who looked out of the window said: "Look here, is not that Qaudjaqdjuq? The bears will soon make way with him." But he seized the first by its

hind legs and smashed its head on an iceberg, near which it happened to stand; the other one fared no better; the third, however, he carried up to the village, and slew some of his persecutors with it. Others he pressed to death with his hands, or tore off their heads, crying: "That is for your abusing me! that is for your maltreating me!" Those whom he did not kill ran away, never to return. Only a few who had been kind to him while he was poor little Qaudjaqdjuq were spared. He lived to be a great hunter, and travelled all over the country, accomplishing many exploits.

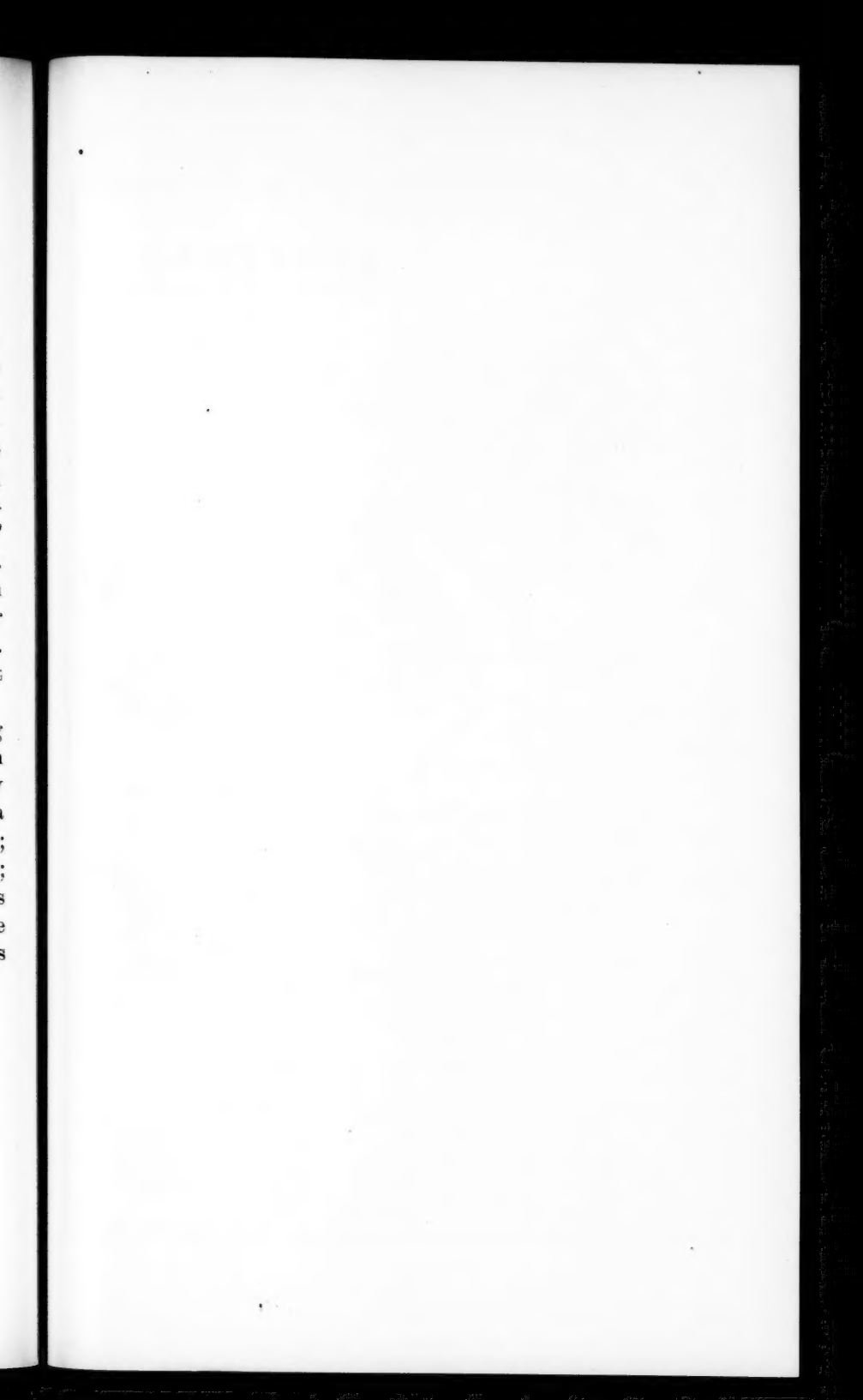
In this story the man in the moon appears as the protector of orphans. He is one of the mighty spirits in the Eskimo mythology. But besides him, a great number of minor spirits are known. They are called Tornait, and appear in the shape of men, bears, or stones. By their help a man may become what is called angakoq, a kind of priest or wizard. The spirits help him to discover the causes of sickness and death, and therefore he is the medicine-man. In their incantations they use a peculiar language, which consists to a great extent of archaic, roots, and it is remarkable that some of these words which I collected on the coast of Baffin Bay are found in the language of Alaskan tribes. This shows that a close connection existed in olden times between the Eskimo of Northeastern America and the inhabitants of Alaska. The angakoq, or the priest, exercises a great power over the minds of the Eskimo. His commands are strictly obeyed, and his prescriptions regarding the abstaining of certain kinds of work or food are rigidly observed. It is strange that the Eskimo, who have a very limited supply of food animals, should restrict themselves in regard to

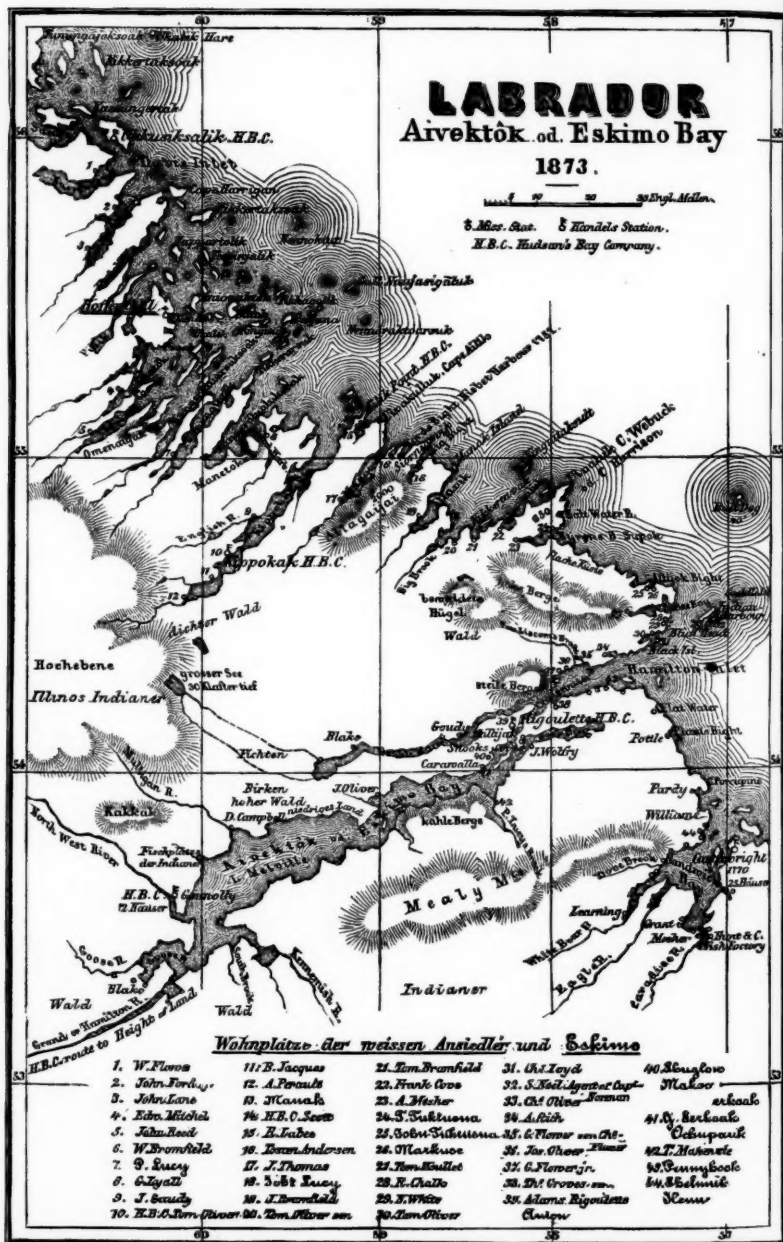
food. Still their regulations on this subject are numerous. For instance, it is absolutely impossible to induce them to eat walrus meat during the deer-hunting season, or *vice versa*. Seal and deer must not be brought into contact, and, although they are not at all cleanly, they wash themselves every time before changing from one food to the other. It is generally believed that the Eskimo are extremely filthy, but I can assure you that this is not so everywhere. In a few huts in Cumberland Sound I found the inhabitants cleanly and good-looking in every respect, while in other places it was quite the reverse. I remember one village, which I visited in winter. Every thing looked so filthy and full of walrus oil that I was really disgusted. When I returned to the tribe in Cumberland Sound I told of my observation. Then all the Eskimo laughed, and a woman said to me: "Did not you know that? They are like the fulmars—when they see blubber they will sit down in it and eat away. They do not mind it when they soil their white coats. But we are like the gulls. We also have to take our food from the blubber and oil, but, like those birds, we keep clear of it, and carefully pick out whatever we want."

The trip to the tribe I mentioned just now was remarkable in several respects. In Eskimoland the arrival of strangers is an event, and great ceremonies are connected with it. The natives of the village stand up in a row, playing with small balls and singing. A strong man stands in front of the row and awaits the stranger. The latter approaches, his arms folded over his breast, his head inclined to the right side. Then the native strikes him a terrible blow on the cheek, and then in his turn awaits the blow of the stranger. Thus they continue a

long while, until one of the men is vanquished. At the end of the performance the stranger is invited into the huts, and henceforth he is the friend and companion of the natives. When I arrived, the men did not know who was coming, and arranged themselves in a row. But as soon as they discovered the white man, the first to visit their settlement, they set up a terrific howling, which induced the women and children to pour forth from the low huts, and then all began a dancing and crying and singing that still rings in my ears. The news: "*Qodlunaq! qodlunaq!*" *i. e.*, "A white man! a white man!" had spread with incredible rapidity over the village. Everybody was eager to see the new-comer; the children hid timidly behind the long frock-like tails of their mothers' jackets, and cried with fear and excitement. In short, it was a scene that will always stand foremost in my recollections of Eskimo life.

After all the many little adventures, and after a long and intimate intercourse with the Eskimo, it was with feelings of sorrow and regret that I parted from my Arctic friends. I had seen that they enjoyed life, and a hard life, as we do; that nature is also beautiful to them; that feelings of friendship also root in the Eskimo heart; that, although the character of their life is so rude as compared to civilized life, the Eskimo is a man as we are; that his feelings, his virtues, and his shortcomings are based in human nature, like ours.





NOTES ON THE PHYSICAL GEOGRAPHY OF LABRADOR.

BY A. S. PACKARD.

Our knowledge of the interior of the Labrador peninsula is still so scanty, owing to its inaccessibility, its unnavigable rivers, the shortness of the summer season, and the lack of game, as well as the enormous numbers of black flies and mosquitoes, that any description of this country must long remain imperfect. The only scientific explorer of the interior is Professor Hind, who ascended the river Moisie, which, however, is a confluent of the St. Lawrence, and is in fact situated only near the borders of Labrador, in the province of Quebec. None of the larger rivers of Labrador have been explored to near their sources; and no one except Indians, and but a single employé of the Hudson Bay Company (Mr. McLean) has ever crossed any considerable portion of the interior. And yet the peninsula is well watered with streams, rivers, and chains of lakes. I have been informed by residents that the Indians of the interior, presumably the mountaineers, can travel in their canoes from the mouth of the Esquimaux River, which empties into the Strait of Belle Isle, across the country to the Hudson Bay posts in Hamilton Inlet. So far as we have been able to gather from maps and the accounts of explorers, such as McLean and Davies, the latter of whom published an account of the Grand or Hamilton River, and the Moravian missionaries,

Kohlmeister and Kno^{ch}, who in their "Journal of a Voyage from Okkak" described the Koksoak River and its probable source, as well as from our own scanty observations taken from elevations near the coast, the interior of Labrador is thickly studded with lakes, somewhat as in the Adirondack region of New York, though the interior country is far more broken and mountainous.

It is certainly most desirable that explorers should penetrate this vast and unknown wilderness, however formidable may seem the barriers to travel. These obstacles would be the rapids and water-falls, the long and difficult portages or carries, and the unceasing plague of mosquitoes and black flies. But the annoyance from insects might not be greater than that encountered by explorers in Siberia, or by trout or salmon fishermen in Northern New England and Canada, while the difficulties and dangers of river navigation would not compare with those of a passage through the Colorado River. The route which would be most prolific in results would be to ascend the Meshikimau or Esquimaux River from its mouth near Salmon Bay, in the Strait of Belle Isle, to its source, and thence to connect with the probably adjacent source of Grand or Hamilton River to the Hudson Bay port at Rigolet, in Hamilton or Invuktoke Inlet. Another journey which would be productive of good geographical results, would be to cross the peninsula from Prince Rupert's Land by way of Rupert River and Lake Mistassini to Hamilton Inlet. The Koksoak River should be explored to its sources, and the low, flat wooded region of the East Main, lying between Hudson Bay and the Labrador coast-region, should be adequately mapped. At present, less is known of the vast region between Hud-

son Bay and the Atlantic Ocean than of perhaps any region of similar extent in North America; although the results of exploration might be of more value to geographical and geological science than to trade and commerce.

Thanks to the labors of the Moravian missionaries, we now have a much better knowledge of the intricacies of the extreme northern coast of Labrador than is afforded by the charts of the British Admiralty or the United States Coast Survey; and it is to the rare opportunity we have been generously afforded by the officers of the Moravian Society in London and Herrnhut, Saxony, that we are able herewith to present maps which are at least approximately correct, and which must for a long time to come be the only source of any exact knowledge of the multitudinous bays, inlets, promontories, and islands of this exceedingly diversified coast.

The first special map of Northern Labrador to be published, was that by the Moravian Brethren, Kohlmeister and Knoch. It comprised the northern extremity of Labrador, north of latitude 57°, including Ungava Bay, and appeared in 1814.

Previous to this, Cartwright, in 1792, had published a map of Sandwich Bay and adjacent regions. Then succeeded the general chart of the coast published by Admiral Bayfield, in 1827, and the later charts of the British Admiralty.

In the United States Coast Survey report for 1860, besides an imperfect outline of the coast given in Mr. Lieber's geological map of the Labrador coast, there is a special map of Eclipse Harbor surveyed by Lieut.-Commanding A. Murray, United States Navy, and drawn to a scale of $\frac{1}{60,000}$, with the soundings indicated.

About the year 1873 (the date is not given on the copy of the map we have received) appeared a map of that portion of the coast embracing the sites of the principal Moravian stations and lying between N. lat. 55° and 59° . It was prepared by L. T. Reichel from the sketches made by himself, and published in the lack of any authentic maps of the coast. For a copy of this and the map of Aivektók or Eskimo Bay we are indebted to the officers of the Society in Herrnhut, Saxony. On this map are given the route of the ship-channel from the southward to Hopedale, and thence to the different Moravian stations up to Hebron; also the overland sledge-routes between Port Manvers and Okkak, and the latter station and Hebron. There is also an attempt to give in a general way the elevation of the coast, and the elevation of Kaumajet Mt. and Mt. Kiglapeit is given as 4,000 feet. Scales of German and of English miles are also given.

The second special map was also prepared by Rev. L. T. Reichel, and published in 1873. It gives what is probably by far the most authentic map of Hamilton Inlet and Aivektók, or Eskimo Bay, and the coast northward, the whole area mapped being comprised between latitudes $53^{\circ} 20'$ and $56^{\circ} 20'$; it is of special value in giving a capital idea of the intricate fiord structure of the coast, and also a census of the white and Eskimo residents.

We have also been favored by B. Latrobe, Esq., Secretary of the Moravian Missions in London, with the loan of a MS. map, by Rev. Samuel Weiz, of the coast from Byron Bay in latitude $54^{\circ} 40'$ around to the mouth of George River in Ungava Bay, and kindly allowed to copy it.

With the aid of the new maps of Messrs. Reichel and Weiz we have been able to have compiled the new general map of the Labrador coast herewith presented; the southern portion of the coast being reproduced from the British Admiralty and U. S. Coast Survey charts, as well as those of the Hydrographic Office, U. S. Navy Department, as follows:

- No. 9.—River and Gulf of St. Lawrence, Newfoundland, Nova Scotia, and the banks adjacent; Sheet 1. English and French Surveys. Published March, 1868.
No. 731.—Anchorages N. E. coast of Labrador, from Br. Surveys. Published Sept., 1876.
No. 809.—Coast of Labrador, Cape St. Charles to Sandwich Bay. Br. Surveys to 1882.

There are in Lt. Gordon's Report of the Hudson Bay Expedition of 1885, charts of the Ottawa Islands in Hudson Bay, and of one of the islands at Cape Chudleigh.*

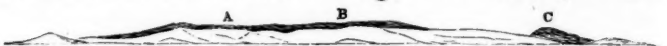
In its general features the peninsula of Labrador is an oblong mass of Laurentian rocks situated between the 50th and 62d parallels of north latitude. On the eastern or Atlantic coast it rises abruptly from the ocean as an elevated plateau, forming the termination of the Laurentian chain, which here spreads out into a vast waste of hills and low mountains.

This plateau of hills and mountains, with barren tablelands, rises abruptly from the sea-level, presenting a lofty but stern and forbidding front to the ocean, throughout the whole extent of 1,100 miles of coast from the Strait of Belle Isle to Cape Wolstenholme.

Mountains.—On the northern shores of the Strait of Belle Isle the general elevation of the coast is from

* Sometimes spelled Chidley.

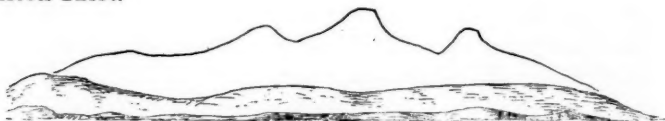
500 to 800 feet, and the highest mountains are the three Bradore Hills, which are respectively 1,135, 1,220, and 1,264 feet in height. From Chateau Bay and Cape Charles the coast rises in height northwards, until at



Outer Battle Island seen from the S. W., two miles distant.

A, Main. B, 50 ft. ? C, Caribou Island.

Square Island the higher elevations form mountains about 1,000 feet high. Going farther on, the Mealy Mountains, said to rise to an elevation of 1,482 feet, are seen forming a range extending along the peninsula situated between Sandwich Bay and Eskimo Bay with Hamilton Inlet.



Mount Misery, or Allagaigai, 2170 ft., due W. of Cape Harrison by chart.

Still higher is Mt. Misery, which we suppose to be the same elevation as Mt. Allagaigai, a noble mountain mass rising to an altitude of 2,170 feet, forming the summit of an elevated plateau region lying half-way between Cape Harrison and Hopedale. It is a conspicuous peak seen when crossing the mouth of Hamilton Inlet, and we well



Coast just N. of Cape Harrison, about 3 miles W. by S.

remember the grandeur of its appearance when partly wreathed in clouds, which left its summit exposed, so as to make it look much higher than in reality.

The highest elevations in Labrador rise from the irregu-

lar coast range between latitude 57° and 60° ; and judging from the views published by Dr. Lieber in the U. S. Coast Survey report for 1860, and by Professor Bell in the Report of the Canadian Geological Survey for 1884, the scenery of this part of the country is wonderfully wild and grand, rivalling that of the coast of Norway, and of the coast of Greenland, the mountains being about as high as in those regions. According to Prof. Bell: "After passing the Strait of Belle Isle, the Labrador coast continues high and rugged, and although there are some interruptions to the general rule, the elevation of the land near the coast may be said to increase gradually in going northward, until within seventy statute miles of Cape Chudleigh, where it has attained a height of about 6,000 feet above the sea. Beyond this it again diminishes to this cape, where it is 1,500 feet. From what I have seen quoted of Labrador, and from what I have been able to learn through published accounts from the Hudson Bay Company's officers and the natives, and also judging from the indications afforded by the courses of the rivers and streams, the highest land of the peninsula lies near the coast all along, constituting, in fact, a regular range of mountains parallel to the Atlantic seaboard. In a general way, this range becomes progressively narrower from Hamilton Inlet to Cape Chudleigh."* The highest mountains in Labrador were previously said by Messrs. Kohlmeister and Knoch to rise from a chain of high mountains terminating in the lofty peaks near Aulezavik Island and Cape Chudleigh. One of the smallest of these mountains, Mount Bache, was measured in 1860 by the Eclipse Ex-

* Observations on the Geology, etc., of the Labrador Coast, etc., Rep. of Geological Survey of Canada, 1884, p. 10 DD.

pedition of the U. S. Coast Survey, and found to be 2,150 feet above the sea-level. This mountain is a gneiss elevation, and a sketch on the geological chart by Mr. Lieber, the geologist of the expedition, shows it to be rounded by glacial action, while lofty, "wild volcanic-looking mountains form a water-shed in the interior, whose craggy peaks have evidently never been ground down by land-ice into domes and rounded tops."

While the highest elevations have never been measured, the height of three of the lesser mountains along this part of the coast appears to have been roughly ascertained. Professor Bell states that the mountains on either side of Nachvak Inlet, about 140 miles south of Cape Chudleigh, "rise to heights of from 1,500 to 3,400 feet, but a few miles inland, especially on the south side, they appear to attain an altitude of 5,000 to 6,000 feet, which would correspond with the height of The Four Peaks, near the outer coast line, about midway between Nachvak and Cape Chudleigh." The mountains around Nachvak, he adds, "are steep, rough-sided, peaked, and serrated, and have no appearance of having been glaciated, excepting close to the sea-level." These mountains are formed of Laurentian gneiss, "notwithstanding their extraordinary appearance, so different from the smooth, solid, and more or less rounded outlines of the hills composed of these rocks in most other parts of the Dominion." The height of these mountains was evidently roughly estimated from that of an escarpment on the south side of the inlet at the Hudson Bay Company's port, which "rises to a height of 3,400 feet, as ascertained by Commander J. G. Bolton" (p. 14 DD).

According to the British Admiralty chart and the

Newfoundland Pilot, Cape Chudleigh rises to a height of 1,500 feet above the sea, and the highest point of the Button Islands has an equal elevation (Bell, p. 17 DD).

Port Burwell is situated on the island of which Cape Chudleigh is the northeastern point. This island is separated from the mainland by McLelan's Strait. "Nunaingok is situated on an alluvial flat, extending between the two branches of the strait. The hill which rises steeply on the south side of it is about 700 feet high; but farther in, between the branches and on either side of them, the mountains are from 1,500 to 2,500 feet high, and have rugged tops and sides" (Bell, p. 19 DD).

In his report for 1885 Professor Bell gives no additional measurements of mountains, but observes: "The mountains everywhere in this vicinity [Nachvak Inlet] give evidence of long-continued atmospheric decay. The annual precipitation at the present time is not great, otherwise small glaciers would probably form among these mountains, which lie between latitudes 58° and 60° , and which overlook a sea, bearing field-ice for half the year, and from which bergs are never absent. Patches of snow, however, remain throughout the summer in shaded parts of the slopes and on the highest summits, which range from 4,000 to 6,000 feet above the ocean."*

South of the region visited by Professor Bell are the two mountains of Kaumajet and Kiglapeit, both of which are put at an elevation of 4,000 feet on Rev. L. T. Reichel's map. Of these the former constitutes a peninsula, off which lies the island of which Cape Mugford is the eastern promontory; while Kiglapeit forms the great headland lying between Nain and Okkak in latitude about 57° , and of which Port Manvers is one of the indentations.

*Ann. Rep. Geol. Surv. Canada, New Ser., vol. i., 1885, p. 8 DD, 1886.

From these facts it will be seen that along this part of the northern coast mountains as high as the Adirondacks, and even the White Mountains of New Hampshire, plunge directly into the sea, and are as wild and sublime as the coast mountains of Norway and Greenland.

Drainage and Rivers.—Of the water-sheds and water-systems of Labrador our knowledge is mostly conjecture, on account of the lack of information regarding the interior. In none of the charts and maps are the rivers and internal lakes accurately represented, and there is the widest discrepancy between the different maps.

The Labrador plateau has an area of about 420,000 square miles. It has a coast-line of about 1,100 miles, stretching from the Strait of Belle Isle to Cape Wolstenholme, and its greatest breadth is said to be 600 miles. It lies between the 49th and 63d parallels of latitude, and the 55th and 79th meridians. Bounded on the east by the Atlantic Ocean, and on the north and west by Hudson Strait and Hudson Bay, its southwestern limits are defined by the Bersiamits, Mistassini, and Rupert rivers. The broadest and in general highest portion of the plateau appears to be in the southern portion of the peninsula, and it is here that the larger rivers appear to take their rise.

From the northern shores of the Gulf of St. Lawrence and Strait of Belle Isle the Labrador plateau rises until it reaches a vast table-land or water-shed in the interior, the edge of which has been reached by Professor Hind in his explorations of the Moisie River.

This elevated region is thought by Professor Hind to attain a height of 2,240 feet above the sea-level. Professor Hind says of the table-land from which the river

Moisie, and also, probably, the Esquimaux as well as Hamilton rivers take their rise : " It is preëminently sterile, and where the country is not burned, caribou moss covers the rocks, with stunted spruce, birch, and aspen, in the hollows and deep ravines. The whole of the table-land is strewn with an infinite number of boulders, sometimes three and four deep; these singular erratics are perched on the summit of every mountain and hill, often on the edges of cliffs; and they vary in size from one foot to twenty in diameter. Language fails to depict the awful desolation of the table-land of the Labrador Peninsula." This table-land or water-shed probably is more or less parallel to the Strait of Belle Isle, and situated between 100 and 150 miles inland. It probably terminates to the northeast in the Mealy Mountains. Numerous rivers descend the steep southern slope into the Gulf of St. Lawrence. Of these the Moisie and Esquimaux rivers are the largest. They are supposed to arise from a chain of lakes on the summit of the water-shed, which also gives rise to the Hamilton River.

The Moisie River forms part of the St. Lawrence River system. It is 250 miles long, and flows south, emptying into that river near the Bay of Seven Islands, at a point west of Anticosti and opposite the northern shore of the Gaspé Peninsula. From this point the streams running into the Gulf assume, the further we go east, a N. W. and S. E. direction. Such is that of the Meshikumau or Esquimaux River, which empties into the western mouth of the Strait of Belle Isle, at the lower Caribou Island. This stream is about 250 miles long, as I learned from residents, and is only navigable for about twelve miles from its mouth by ordinary fishing-boats. There is no large

river between this and Hamilton River, which flows into the Atlantic in a direction a little north of east. The latter river seems to flow in a fissure that runs at right angles to the line of upheaval of the syenite and traps of the Atlantic coast; as upon the Gulf coast the rivers flow from the northwest along natural fissures in the earth's crust that run at right angles to the axis of elevation of the Laurentian chain on the north side of the St. Lawrence. In this connection it should be noticed that the fiords on the Atlantic coast of Labrador assume the same direction, and though they agree much in this respect with the direction of those farther south, there is yet a greater west and east course as we go northward toward Cape Chudleigh, until beyond latitude 58° the fiords run in a N. W. and S. E. direction, especially on the Hudson Bay slope. According to Davies, the Grand or Hamilton River is supposed to rise from a chain of lakes in the "rear of the Seven Islands, and flows for a considerable distance on the top of the ridge, if I may so express it, between the head-waters of the rivers falling into the St. Lawrence and those falling into the Hudson Bay and Strait, for they are said by the Indians to be quite close to the waters of the Grand River on either side." Our author also states, that "two hundred miles from its mouth it forces itself through a range of mountains that seems to border the table-land of the interior, in a succession of tremendous falls and rapids for nearly twenty miles. Above these falls the river flows with a very smooth and even current." McLean in 1839 descended the river from the now abandoned Fort Nasquapee, situated on Lake Petchekupau, to its mouth. He had reached the fort from Ungava Bay. Two other important rivers empty

into Invuktoke Bay: the Kenamon, which flows in from the south, and the Nasquapee or Northwest River, which is a larger stream with a very circuitous southeasterly course.

Professor Hind gives us the fullest information as to the rivers of this region, and I should regard his map as, in this respect, the most authentic one yet published. The situations of the rivers and lakes as given in our map are copied from his, with the exception of those on the Atlantic coast mapped by Messrs. Reichel and Weiz. Hind, however, strangely ignores the Esquimaux River, which empties into the Strait of Belle Isle.* According to Hind, whose work appeared in 1863, and who obtained his information from employés of the Hudson Bay Company: "The couriers of the Hudson Bay Company traverse the country between Musquano (or Natashquan) and Hamilton Inlet two or three times every year. The journey can be made in fifteen days in canoes, and this route has long been a means of communication between Hamilton Inlet and the Gulf. The St. Augustine forms the great canoe route of the Montagnais through this part of the country. . . . The St. Augustine, falling into a fine bay of the same name, has its source in the lakes and marshes on the table-land, which also give

* "The Kenamon River, which enters Hamilton Inlet from the south, cuts through the Mealy Mountains thirty miles from the coast; it is a succession of rapids, and scarcely admits of navigation, even by canoes. The Nasquapee or Northwest River falls into the inlet on the north side, nearly opposite the mouth of the Kenamon. The inlet is here twelve miles across. About two miles from its outlet the Nasquapee River passes through a long narrow lake bordered by high mountains. It takes its source in Lake Meshikumau (Great Lake), and the river itself, according to Indian custom, is called by the Nasquapees Meshikumau Shipu. There is a canoe communication between this river and the Ashwanipi, which is shown on two maps, constructed by Montagnais Indians, in my possession."—Hind's "Labrador," ii., 138.

rise to the Kenamon, which falls into Hamilton Inlet. By this route the Montagnais can journey in their canoes from the Gulf of St. Lawrence to Hamilton Inlet in seven days."

The country north of Hamilton Inlet is thus described by one of the Hudson Bay Company's officers (presumably Mr. McLean) who was sent to explore it: "From Northwest River House the Nasquapee River is ascended for about sixty-five miles, when it is left at Mont à Reine Portage. The country from Mont à Reine Portage to Little Seal Lake is as barren and as miserable as can be seen anywhere; the trees are all burnt, and nothing but stones and dry stumps to be seen. On the 1st of July, 1839, the ice was still firm on Meshikumau or Great Lake. There is no wood to build on the shores of that extensive sheet of water; it is only at Gull Nest Lake that wood remains in that direction. The borders of Nasquapee River, when the expedition ascended it in June, were still lined with ice, some of it ten feet thick." (Hind.)

South of Hamilton Inlet, after passing the first range of mountains on leaving the bay, an elevated plateau is gained, says Hind, which continues until the shores of the Gulf of St. Lawrence are approached, when the country becomes more mountainous and slopes rapidly to the sea-side. The breadth of the plateau is 100 miles, and it abounds in lakes.

The Atlantic system of streams to the north is one of small rivers flowing into the ocean in an easterly course.

Ungava Bay receives two important rivers which imperfectly drain the northwestern slope of Western Labrador. The smaller of the two is the Kangutluksoak or George River, which empties into the bay in

lat. $38^{\circ} 57'$, and is 140 miles long. Its water-shed is said by Kohlmeister and Knoch to be a chain of high mountains which terminates in the lofty peaks of syenite at Aulezavik Island and Cape Chudleigh.

The two Moravian missionaries mentioned above state in addition that "this chain of mountains may be seen from the Kangutlualuksoak River, in Ungava Bay, which is collateral proof that the neck of land terminated to the north by Cape Chudleigh is of no great width. Both the Nain and Okkak Esquimaux frequently penetrate far enough inland to find the rivers taking a westerly course, consequently towards the Ungava country. They even now and then have reached the woods skirting the estuaries of George and South Rivers." These missionaries describe the Koksoak or South River as flowing smoothly through a low, rocky (probably Silurian) district, and emptying into Ungava Bay in lat. $58^{\circ} 36'$. It is said to resemble at its mouth the Thames, and affords anchorage for vessels twenty-four miles from its mouth. This stream probably arises near the source of the Grand or Hamilton River, and flows in a N. N. W. direction, probably along a natural fissure formed by the juncture of the Silurian rocks and Laurentian system.*

* This river is said to have its source in Lake Caniapuscau, which is 70 miles long and 20 broad, situated in the centre of the peninsula, equidistant from the St. Lawrence, from Ungava and Hamilton Inlet, being 350 miles from each of those points.

"It is rapid and turbulent, flowing through a partially wooded country. At South River House (now abandoned) it receives the Washquah River, which forms the route of communication between Ungava Bay and Hamilton Inlet. From this point to the sea (150 miles) the current, though strong, is less broken by rapids; it also widens very much, and ninety miles from its mouth it is a mile in breadth, flowing between high rocky banks, thinly clothed with trees; it is nearly a league in width. Fort Chimo is situated twenty-eight miles from the sea." George's River was ascended by officers of the Hudson Bay Company to establish relations with

At the western political boundary-line between Labrador and Prince Rupert's Land, according to recent maps, we find apparently another water-shed, which on the eastern slope sends a few streams into the Koksoak River, while on its western slope descend several streams which flow in a westerly course into Hudson and James' bays.

Thus it will be seen that these four river systems take their rise from a great water-shed which curves in a south-westerly direction from Labrador along the northern shores of the St. Lawrence River and the Great Lakes.

Lakes.—The following remarks are taken from our memoir on the "Glacial Phenomena of Labrador and Maine." *

Labrador is essentially a *lake* district. Its numerous rivers afford a very imperfect system of drainage to a country densely covered with lakes, ponds, and pools, and morasses innumerable. It resembles in this respect the probable aspect of the Lake or Terrace period in New England and Canada after the Glacial period, when the present broad rivers were only chains of lakes, and may thus be said to be in an embryonic stage, as its river-beds have never been remodelled and scooped out into gentle declivities and broad valleys, nor immense depths of sand and clay deposited to smooth over the inequalities of the rocky surface of the country, such as in the temperate zone

the Nascopé Indians, near its source. For 220 miles it was, though full of rapids, deep enough for barges. "The general course of the river is north, running parallel to the coast of Labrador, where it is at no time more than 100 miles distant, and often much nearer" (Hind). We may expect a full description of the region about Fort Chimo when Mr. L. Turner's report is issued, as he spent two years at this station.

* *Memoirs of the Boston Society of Natural History*, i., 210-303, 1866.

render a continent inhabitable throughout its breadth; while in Labrador man can only inhabit the coast, and gain a livelihood from the sea.

We must distinguish two classes in the lakes of Labrador, viz.: the deep mountain *tarns*, lying in the interior, directly upon the summits of the water-sheds; and the far more numerous broad, shallow lakes and pools spread profusely over the surface below the height of land. These last occupy shallow depressions and hollows, most probably excavated by glaciers in valleys which have been simply remodelled by glacial action. The deep tarns, on the contrary, evidently fill original depressions, sinking between lofty ranges of hills. Davies says that in the region about the source of the Hamilton River the lakes are very deep, and lie directly on the height of land, while the ponds on the lowlands are shallow; and, on the other hand, those which directly communicate with the ocean or with the fiords are in general distinguished for their depth. "This almost universal shallowness of the lakes is a singular feature, when the nature of their borders is taken into consideration, as they are generally surrounded by hills, which would lead one to look for a corresponding depth in the lake; but instead of this some are so shallow that for miles there is hardly water enough to float a half-loaded canoe. I am informed by my friend, John McLean, Esq., that this is likewise the case with the lakes lying on the watershed of Ungava Bay. The lakes lying *on* the table-land are said to be deep." He also states that the large lakes in the interior are well stocked with fish, while the shallow lakes, and, in fact, the deep ones communicating with the ocean, are in general very destitute of them.

We must believe that the same causes that produce the deep fiords likewise account for these deep fissures and depressions in the summit of the water-sheds. It is evident that any amount of glacial action, however long sustained and vast in its operation, can never account for these rude, irregular, often "geoclinal," troughs which follow lines of fracture and faults, lying along the axis of elevation of mountain chains, or at nearly right angles to them.

Fiords.—The fiords on the Labrador coast are of great extent and depth. They are either original lines of fracture and faults, or what Professor Dana terms *geoclinal* troughs, occurring at the line of juncture of two rock formations. Thus, Chateau Bay is a fissure at least 1,200 feet in depth. The western shore rises 600 feet above the sea-level, and the waters of the bay at their deepest are 600 feet in depth. This fault must have been produced at the time of the upheaval of the syenites of the coast.

All the broad, deep bays and fiords on the Atlantic Ocean occur at the juncture of the syenites and gneiss. There are deep bays between Cape St. Lewis and Cape St. Michael's, where syenites rise through the gneiss, producing faults and lines of dislocation. The large bay just north of Cape St. Michael's occurs at the junction of gneiss and "hyperite" rocks. Sandwich Bay and Hamilton Inlet were formed by the denudation of the Domino gneiss. Despair Harbor is a deep fiord occurring at the juncture of the "Aulezavik gneiss" of Lieber, with syenitic rocks forming the coast-line between this point and Hopedale. The irregular overflows of trap and syenitic rocks which enclose the gneiss rocks, produce an

immense number of cross fiords and channels, from the presence of innumerable islands which line the coast, and are composed of these eruptive rocks.

These original fissures and depressions have been modified by glaciers, by frosts and shore-ice and ice bergs, and by the waves of the sea.

The shallow lakes, formed most probably by glaciers, lie in shallow troughs, upon a thin bed of gravel and boulders. We only learn in some regions, especially in Southern Labrador, that the country has been covered with boulders by their presence on the banks and in the centre of these pools. Clear examples of lakes partially surrounded by walls of rock, with the banks at one end completed by a barrier of sand and gravel, are frequent. Such barriers of drift have lost entirely their resemblance to glacial moraines, to which they undoubtedly owe their origin, since the drift deposits have been remodelled into sea beaches composed of very coarse gravel and boulders, while the finer materials have been swept away by the powerful "Labrador current," with its burden of icebergs and floe-ice that has so effectually removed traces of the former presence of what we must believe to have been extensive glaciers.

From all that has been published, it would seem that the entire interior of the Labrador peninsula is strewn with boulders, having once been covered with land-ice, which flowed into the Atlantic on the east and south, and Hudson Bay on the west and north. The forest growths sometimes clothe the lower hills, but in general are confined to the protected river-valleys and lake basins.

It is to be hoped that at no distant day some skilled

explorer, with a sufficient knowledge of geology, may thread the interior of the peninsula from Ungava to Hamilton Inlet, passing thence by the Esquimaux River to the Strait of Belle Isle. The region from the headwaters of the Hamilton River to Hudson Bay should also be traversed, and when this is done we shall be provided with a knowledge of this vast shadowy, gloomy, forbidding region, of which we now apparently know less than of the interior of Alaska, the tundras of Siberia, or the plateaus of Central Africa.

GEOGRAPHICAL NOTES.

THE REVUE COLONIALE INTERNATIONALE.—The November issue of this review gives notice that it will cease to appear with the end of the year 1887 for “want of a sufficient number of subscribers.”

The public is such an intangible entity that to reproach it were a waste of time; but there is surely something wrong with what is called the enlightened public of our day when a worthy enterprise fails to find support.

It is a duty to say that the *Revue* has published in the two years of its existence articles of intrinsic, and of almost indispensable, worth; that its editorial supervision has been in every way admirable; and that its disappearance is mere, unredeemed loss.

ACTION OF OIL ON OCEAN WAVES.—M. Virlet d' Aoust writes on this subject to the Paris Geographical Society, without appearing to know that the U. S. Hydrographic Office has, for many months past, published in its Pilot Charts of the North Atlantic Ocean a great number of reports from captains who had tried the effect of oil in storms, and invariably with success.

The Chart for October gives the names of sixteen commanders, English, Dutch, American, and Italian, who encountered gales and hurricanes at the end of August and the beginning of September of this year, and saved

their vessels, previously in great danger from the heavy seas, by the use in some cases of about eight gallons of oil in twenty-four hours. In other instances a great deal of oil was thrown overboard, unnecessarily, as the general experience shows. Capt. Brown, of the American ship *Emily F. Whitney*, reports: "On Aug. 25th, while hove to in a severe hurricane, the vessel making very bad weather of it, the seas breaking over the ship fore and aft, was obliged to use oil. Put over three bags to windward, one abreast of fore, main, and mizzen rigging. The bags were about eighteen inches long and twelve inches wide, filled with oakum and two gallons of oil—kerosene and fish oil mixed. The effect was apparent at once, the oil smoothing the sea so that no more water came on board. Used the oil until 8 A.M. of the 26th, using in all about eight gallons."

Capt. Atanasio, (a baptismal name?) of the Italian barque *Augusta*, was caught in the same hurricane on the 26th and 27th Aug., and the vessel lay to for ten hours under bare poles. The captain had read the Hydrographic Office reports, and had taken some porpoises from which he got six gallons of oil. This quantity was sufficient to enable his ship to ride out the gale with safety.

ATLAS OF NEW JERSEY.—This atlas, begun some years ago by the State Geological Survey, under the direction of Prof. Geo. H. Cook, has been completed. The maps, seventeen in number, are topographical, on a scale of one inch to the mile, with the contours and the indications of altitude; and the work is equally remarkable for beauty and for accuracy. It is, at the same time, a performance all the more creditable to New Jersey, that it is the first

entirely worthy publication of the kind made by any State of the Union.

A PLEA FOR THE METRE.—Under this title Mr. E. G. Ravenstein makes, in the *Proceedings* of the Royal Geographical Society for November, a strong argument in favor of the use of the metre in geographical publications.

With practical good-sense he wastes no time in inquiring whether the metre is, or is not, a "natural" unit, or whether some other standard might, or might not, be preferable to it.

He takes existing facts, and shows that the metre is now the recognized standard in countries possessing an aggregate population of 347,000,000, and that it has been successively introduced since 1803 into twenty-three European and American States, and into Egypt, the latest government to adopt the system having been the Argentine Republic, in 1887. The metre is much more widely used than appears from this statement, for the scientific men of all countries have accepted it.

Five hundred and fifty-three millions of people, including the Chinese, the Danes, and most of the Africans, use various measures of length, no one of which does more than hold its ground. The case is somewhat different with the English foot, which is the standard among 471,000,000 of men, including the 256,000,000 of India.

It is to be noted, however, that this standard has made no conquest since it was adopted by Russia in 1831, while the metre is, on the contrary, steadily advancing from victory to victory. Another distinction has been overlooked by Mr. Ravenstein. The adoption of the metre by any country carries with it, almost invariably,

the adoption of the decimal system in all weights and measures, while the introduction of the English foot into Russia has had no effect whatever on the Russian moneys or weights or measures of capacity.

The export and import trade of Great Britain in 1885 was divided, according to Mr. Ravenstein, as follows: With countries using the English foot, £292,707,000; with countries using the metre, £283,011,000; with the rest of the world, £8,295,000.

In another table the countries that use the metre are credited with a collective area of 12,671,000 square miles, and those that employ the English foot with an area of 18,188,000. In this table the United States figure for 577,390 square miles! Figures, like edge-tools, should be handled with infinite care.

Simplicity and reason are on the side of the metre, but use and wont die hard. It is nearly one hundred years since the code for the regulation of the United States mint was established. The monetary system and the coinage were, and are, supposed to be decimal; and yet not only do the people of the United States make their calculations in daily life according to the divisions of the old Spanish pieces of eight, but the mint still issues a coin, the quarter dollar, which has no logical relation to the decimal system.

THE RAÏAN MOERIS.—In the October number of the Royal Geographical Society's *Proceedings* the project of a storage reservoir in the Raïan basin, in Middle Egypt, is treated by four writers. Mr. Cope Whitehouse gives an account of his surveys and explorations; Colonel Ardagh considers the practicability of the plan; Captain

Surtees gives the topographical features of the desert from Dahshur to Aïn Raïan; and Captain Brown describes the Bar Yusuf. The creation of a reservoir in the place which Mr. Whitehouse believes to be the bed of the ancient Moeris, would furnish the means of bringing under irrigation 2,390,000 acres of land, and of adding £3,000,000 to the revenue of Egypt. The cost of the work is estimated at less than £1,000,000, and with regard to its feasibility Colonel Ardagh says that there are no engineering difficulties in the way. He thinks that Mr. Whitehouse merits the thanks of antiquarians, as well as of modern engineers, for his researches relative to Lake Moeris, and that the people of Egypt should be most grateful to him for his efforts to arouse public interest in a scheme of such value to their prosperity.

THE CAVES OF STAFFA.—Mr. Cope Whitehouse writes, in the *Scottish Geographical Magazine* for October, a long and entertaining paper to show that the caves in the island of Staffa are the work of the Phœnicians. It fell to his lot, he says, to examine the current opinion in regard to Fingal's Cave "in the course of scientific researches on the frontier of human thought"; or, in other words, on the boundary line between the knowable and the unknowable. This line evidently passes through Fingal's Cave, and to have established this fact is an achievement hardly surpassed by the hollowing out of the cave itself. The illustrations given add much to the charm of the story.

FARINI IN THE KALAHARI DESERT.—In November, 1885, Mr. G. A. Farini read a lecture before the Berlin

Geographical Society on his travels in the Kalahari Desert. In March, 1886, he read a paper on the same subject before the Royal Geographical Society, in London. His book, "Through the Kalahari Desert," fell under the notice of Dr. Hans Schinz, at Cape Town, in December, 1886, and excited so much surprise in this well-known African traveller that he has been moved to express his sentiments in *Petermanns Mittheilungen*, 33 Band, XI.

Dr. Schinz remarks that Farini started on his journey from Cape Town on Friday, June 2, 1885, and that this is the only date given in the narrative. In an appendix to the English edition of the book Dr. Schinz finds, however, a letter from the botanist Hooker, acknowledging with thanks the receipt of plants and seeds, which Farini, on page 436 of the work, declares he himself brought to England. This letter bears date August 24, 1885; and Dr. Schinz, after allowing three weeks for the voyage from Cape Town to England, discovers that Mr. Farini must have performed the march across the desert to Lake Ngami and back to Cape Town in sixty-one days. Mr. Farini did even better than this. There is but one date in his book, but each day's journey is set down, and Dr. Schinz, by going through a simple sum in addition, is brought to the conclusion that Mr. Farini consumed sixty-three days in reaching Lake Ngami from Cape Town; so that, according to his own record, he performed the whole journey across the desert and back in two days' less time than he took for half of it. There could be no more striking illustration of Hesiod's profound remark that the half is greater than the whole.

Dr. Schinz is within bounds when he declares that "Through the Kalahari Dessert" is a work worthy of Jules Verne.

THE PILLAR OF THE CONGO.—Baron Schwerin, of the Swedish Congo Expedition, rediscovered lately (after Burton) the fragments of the pillar set up in 1484 (?) at the mouth of the great river by Diogo Cão, or Cam.

The sunken square base and the broken shaft measured, taken together, three or four feet in height. One of the pieces was a fetich for the natives, who had decorated it with bright-colored rags and bits of stuff.

The history of the stone is interesting. It had been the custom of the Portuguese to put up wooden crosses at points along the coast when they took possession of newly discovered territories. But John II. ordered that in place of these crosses his captains should erect at each point a stone monument, or pillar (*pedra padraõ*), twice the height of a man, and bearing the royal arms of Portugal, with an inscription in Latin on one side and on the opposite side in Portuguese, declaring the name of the king who had sent out the expedition, and in what year and by what commander the pillar had been set up; and that on the very top of the pillar there should be a stone cross, held firmly in its place with lead. (Barros, *Da Asia*, Dec. I., Liv. III., Cap. III.)

Diogo Cam planted the first of these monuments on the south side of the mouth of the river, which, from this circumstance, was long known as the River of the Pillar. "It is now called," says Barros, "the Congo, because it flows through the kingdom of Congo, which was discovered by Diogo Cam during this voyage, although the true name of the river among the natives is Zaire."

It is not known that Cam made more than two voyages to the African coast; and the date of 1484, assigned to the first one, seems to be erroneous. It is not easy, at

least, to make this date agree with the facts given by the Viscount de Sanches de Baena in a communication to the *Boletim* of the Lisbon Geographical Society (6^a Serie, No. 1, pp. 55, 56) on the genealogy of Diogo Cam. The Viscount gives to the first voyage the date of 1482, and to the second that of 1485; and he quotes, in support of this chronology, the following passages from a decree made by the king, D. João II.:

"Grants, etc., to him (Diogo Caão) and his descendants, etc., a shield, bearing on a field, vert, two columns, or pillars, argent, and on each column a cross, azure; and for a crest the two columns, or pillars, saltier-wise, etc., etc. For the services rendered by his grandfather to the king, D. João I., in the wars of Castile, and especially for his own [services] in Guinea, whither he was sent to make discoveries for the increase of the Holy Faith, and for the aggrandizement of the kingdom, etc. Given at Santarem, the 14th April, 1484."

The voyage must have preceded the grant, and the placing of the stone is ascribed to the first arrival at the Congo. The inscription, which would decide the question between the dates, has not been recovered.

THE RUSSO-AFGHAN FRONTIER.—The *Journal de Saint Pétersbourg*, of August 26th/ September 7th, describes, from monument to monument, the new frontier between the Russian and the Afghan territories. As given in detail, the line is a model of irregularity, and could not have been better devised had its purpose been to facilitate and provoke trespass from the one side or the other. It begins at Zulfikar Pass on the Heri-Rud, runs E.S.E. to the Kushk River, which it crosses, and turns N.E. to near

Maruchak, on the Murghab. It follows this river N.W. to Penjdeh, whence it runs directly E., then E.N.E., then N.N.E., then E.N.E., and N.E., to Khoja-Saleh, on the Amu-Daria (Oxus). The length of the frontier is about 400 miles. According to M. Venukoff (*Revue de Géographie* for October), the settlement gives every thing to Afghanistan and nothing to Russia. The line is nowhere marked by important natural features, such as rivers, lakes, or chains of mountains, the only elevations through which it passes being the tops of the low hills that bound on the north the basin of the river Kaïsor, an affluent of the Murghab.

There are hundreds of rivers and streams on the Afghan side, while there are but four on the Russian, and for more than half of the frontier the desert between the Murghab and the Oxus makes the establishment of Russian colonies impossible.

The highest point is 3,200 feet above the sea; a fact which proves that no trees can ever be made to grow upon the hills, because in the dry climate of Central Asia, under the 37th degree of latitude, trees are not to be found below an elevation of 5,600 feet, except in deep and narrow gorges, watered by torrents.

M. Venukoff's criticism would have greater force if it did not betray something like animosity against the Russian statesmen and officers charged with the conduct of the treaty.

Herr Wichmann, on the other hand, recognizing, in *Petermanns Mittheilungen*, Band 33, XI., the probable discontent of political minds with the results attained, expresses his own satisfaction with the labors which have given to the domain of geography wide regions hitherto

unexplored. The Russian surveys were necessarily limited to the former territory of Independent Turkistan, with the boundary towards Persia and the course of the Oxus.

The English Commission, under Major Holdich and Captains Gore and Talbot, had a far more comprehensive task in hand. Within two years the topographers surveyed and mapped in Northern Afghanistan nothing less than 120,000 square miles of country. Herr Wichmann may well say that no such feat has been elsewhere accomplished.

THE SAMOAN ISLANDS.—These islands may now be regarded as part of the growing German colonial empire. In September, 1887, the Germans deposed the king Malietoa, and set up in his place Tamasese, who is described by some English writers as a rebel chief.

The Samoan group comprises nine inhabited islands and a number of islets lying in the Pacific, between $13^{\circ} 30'$ and $14^{\circ} 30'$ S. Lat. and 168° and 173° W. Lon., with a surface of 1,100 sq. m. and a population of 34,000. The people are of the Polynesian race, large and finely formed and very intelligent. They profess Christianity. According to Mr. Churchward, who was British Consul at Apia from 1882 until a year ago, the people, notwithstanding their fine gifts, are weak, and anxious to be under the protection of a strong Power; and they prefer England. It seems a pity that this preference should not be respected, the rather that it coincides so remarkably with that of all the other islanders who have, or have not, been made subjects of the British crown; but if the Samoans wanted a strong government, they ought to be satisfied with Germany.

To those who have seen with dismay the extinction of so many of the less developed races when brought within the sphere of the English influence, it will be interesting to watch the methods of Germany as a colonizing Power. Admirable colonists themselves under other governments, the Germans should be capable of saving, while they civilize, the South Sea Islanders.

DR. W. KONER.—This distinguished scholar died in Berlin September 29, 1887. He had been, since 1861, the editor of the *Zeitschrift der Gesellschaft für Erdkunde*, and had contributed to its pages many valuable articles, besides the well-known yearly reviews of geographical literature.

ANTONIO AUGUSTO D' AGUIAR.—Senhor d' Aguiar, President of the Geographical Society of Lisbon, died suddenly in that city on the 4th of September, 1887, at the age of 49 years.

At a solemn commemorative session of the Society in October, Senhor Gomes de Brito reviewed the character and the career of the deceased President in an address, eloquent with the tone and the emotion of one who had suffered nothing less than a personal bereavement.

THE DOLMENS OF ENFIDA IN TUNISIA.—Dr. Rouire communicates to the *Société de Géographie*, of Paris, an account of these remarkable monuments. They are situated in the plain of Enfida, which is only a prolongation of the great plain of Kairwan, towards the sea. Hidden from sight by the undulations of the soil, the wild growth of cactus and hawthorn and jujube trees, as

well as by the fields of barley and wheat, they remained undiscovered until in quite recent times. The soil of the region is rocky, with outcroppings of limestone in the midst of clay or sand. The dolmens, which number about eight hundred, are scattered over a space of 600 acres, and are separated by intervals of from 30 to 170 feet. They are of a perfectly defined and regular type, composed of a long horizontal slab of stone, resting on upright slabs. The most of them are not covered with earth or stone so as to form a tumulus, but here and there in the lower ground there are real buried dolmens.

All those that Dr. Rouire examined had their openings towards the east or the southeast, but he does not venture to affirm that this is a characteristic of the Enfida dolmens. They are all, however, remarkable for the smallness of their dimensions, which recall those of the province of Constantine, and of Roknia in particular.

The sepulchral chest is not more than 5 ft. 8 in. in length, and between 2 ft. 8 in. and 3 ft. 4 in. in width. The upright slabs are rarely more than 3 ft. 4 in. in height, and not always so much. The thickness of the slabs is from 8 to 10 inches.

A circle is drawn around the monuments in blocks of limestone, two or three times the size of the fist. This circle encloses sometimes a single dolmen, sometimes two, or three, or four, and even six, and two concentric circles occasionally surround one or several dolmens; and all these are in their turn brought within a great circle that embraces even a hundred dolmens.

The Beys had from time to time searched these monuments without making any discovery. Dr. Rouire examined a dozen of them. Some were empty; in others

he found bones mingled with bits of pottery. Five pieces of the pottery have been deposited in the Musée d'Ethnographie. These are: An open lamp, shaped by hand; a small flattened, cylindrical cup; a little saucer, very well baked; a little pot, and a larger one, unfinished. The first is in earth; the last four are in clay with lumps of lime in it. All are rudely fashioned.

POTANIN'S JOURNEYS.—*Nature*, of Dec. 8, gives a condensed report from the Russian of the explorations made during the past three years in E. Tibet and the E. Gobi, by the Russian travellers Potanin, Skassy, and Berezovsky. The expedition crossed the Peking plain and the mountains beyond to Ku-ku-Khoto, and thence moved S. across the Ordos plain (where Jenghis Khan lies buried) to Lan-Chu and to San-Chuan on the Hoang-Ho River. Here the travellers parted for the winter. In the spring they met again, and went as far S. as Lu-nan-fu. They returned to Lan-Chu for the second winter, and made their homeward journey the third year by way of the Ku-ku-Nor and across the Gobi to Kiakhta, and through Siberia to Russia.

The Ordos plain had been visited before this expedition by only two Europeans, the Abbé Huc, and Prejevalsky. The plateau is 3,300 feet above the sea and is covered with sand, which is steadily blown by the wind from the S.W. toward the N.E.

The high plateaux between the Tibet Mountains and those of Shan-Si are cut by the rivers into cañons sometimes 2,000 feet deep. There is little wind or rain, and the atmosphere is charged with dust. On the Amdo plateau the lowest elevation found was 7,000 feet and the

highest 12,000. The Ku-ku-Nor lies 10,700 feet above the sea; and S. of it are still higher steppes, where it snows but never rains, and marshes spread over large areas. Between this plateau of Amdo and the Chinese lowlands are heights, watered by the tributaries of the Yang-Tse-Kiang. The region is very picturesque. Routes pass over the mountains and up flights of steps cut in the rocks, and on wooden balconies built along the steeps, while suspended bridges swing over streams that flow in a succession of rapids and falls.

The S. E. slopes receive the rains and are clothed with a thick forest of conifers and deciduous trees; and at the base of the mountains the flora is sub-tropical. The villages and towns are clean, with well-built houses furnished with windows.

N. of the Amdo plateau stretches a desert as far as the Khangai Mountains. Beyond the Khangai there are rich meadows, and on the hill-sides there are forests of larch, with some Siberian cedars; and in the lower valleys the Mongols cultivate the ground.

The expedition surveyed a stretch of not less than 4,400 miles and determined the position of 69 places. Rich collections were brought home, and Mr. Berezovsky, who is still in China, writes that he has added very many specimens of birds from later journeys.

The report in *Nature* omits the interesting fact that Mrs. Potanin shared the experiences and the toils of her husband during the three years' wanderings.

PROJECTED PANAMA SHIP RAILWAY.—The *Journal* of the Manchester Geographical Society publishes, in the supplement to Vol. II., 1886 (just received), the following letter:

"DUBLIN, March 12, 1887.

"DEAR MR. SOWERBUTTS:—I perceive that the bar of the Goazocoales, up which Captain Eads intends to navigate his flotilla to the terminus of his 'ship railway' (see p. 223, Vol. II.), has suddenly shoaled from 14 feet to $3\frac{1}{2}$ feet. As you are aware, this does not surprise me, but it indicates how careful the public ought to be in depending on the fads of great engineers.

"Yours truly,

"W. W. KIDDLE, *Commander, R. N.*

"P. S.—Since I wrote my letter, I saw this: 'Captain James B. Eads, originator of the isthmus ship railway project, and builder of the Mississippi delta jetties, died at Nassau, New Providence, on Tuesday last, aged 67.'

"W. W. K."

The reader of this ingenuous letter is disturbed with conflicting emotions. Respect for the gallantry of English seamen is an American inheritance, but when a commander of the Royal Navy is not surprised at finding the Isthmus of Panama where the Isthmus of Tehuantepec ought to be, and ignominiously hustles the Coatzacoalcos River into the Goazocoales, it is plain that gallantry is not his only distinguishing quality.

BOMA.—M. A. J. Wauters writes, in *Le Mouvement Géographique*, of November 6th, a lively account of this place, which is the seat of government of the Congo Free State.

Boma is on the Congo, about 65 miles from Banana, the seaport at the mouth of the river.

It was in 1877, that an English consul, Captain Hopkins, while ascending the Congo, found in the river a number of bodies fastened together by a chain, on which

was inscribed the name of the slave-trader, who had taken this way of punishing his slaves. The ancient history of Boma begins and ends, according to M. Wauters, with this grim incident.

To-day, Boma has a population of 100 whites, 2 of them women, and 500 blacks. More than half of the whites are officials of the government, the others being attached to the various European establishments. The blacks are soldiers, laborers in the employ of the government, or workmen in the warehouses.

Food is plentiful. All kinds of vegetables are cultivated, and the Portuguese of Mossamedes supply the market with excellent beef, so that the *rosbeaf* and *beefsteack* are to be had at any time. The houses are of iron, and pleasant to live in, but there is a lack of furniture for the sleeping-rooms.

On the other hand, there is an admirable club, with a billiard-room, card tables, a reading-room, and a library, all comfortably and thoughtfully installed in the sanitarium of the town. It is worthy of note that no European has died in the place since last January.

The armed force of Boma is composed of 100 Houssas in red coats, and 100 Bangalas in yellow coats. This force is exercised every morning at six o'clock.

Five steamers and a schooner maintain the communication between Boma and Banana.

The titles to real estate are regulated by the Torrens Act, which has been adopted also and applied by France in Tunisia; and a system of scientific survey has been steadily carried out by the government of the Free State, from the beginning.

These details will have their value when Boma becomes a great capital.

TITLES OF PAPERS IN GEOGRAPHICAL JOURNALS.

AMSTERDAM.—*Revue Coloniale Internationale.*

The Chinese Railroads of the Future—France on the Congo—Opium in Indonesia—On the Caravan Tea and Its Route—Commerce and Trade on the Congo—The German Merchant and his New Problems—The Spanish-American Republics—Game and Hunting in Java—Corea, Considered in Its Economic Aspect and Its Relations to Civilization.

BERLIN.—*Deutsche Kolonialzeitung.*

The Situation in Samoa—Natural Productions of the Western Pacific—Zanzibar—The Dewarra Money in Neu Pommern—Government Aid for Steamers to East Africa—Pleasant News from Kamerun—Paraguay—Trade with Southwestern China—Latin and German Immigration into Southern Brazil—Report on the Transactions of the Sixtieth Congress, German Naturalists, and Physicians. (Medical Section)—Coast Journeys in East Africa—Zanzibar and the Somali Coast—The Future of the Congo Land—Notes on the Climate of Walfisch Bay—Germany in Brazil—Concerning Paraguay—Trade and Steam Communication with German Southwest Africa—The French Colonies.

BORDEAUX.—*Bulletin de la Société de Géographie Commerciale.*

Geographical Results of the Seventh Campaign on the Upper Senegal—European Commerce in Annam—The Navigability of the Upper Mekong—Notes on Cambodia—Letters from Corsica—

Senegal and the French Sudan—Algeria—The Khon Cataract (Upper Mekong).

BREMEN.—*Deutsche Geographische Blätter.*

The Black Forest—On the African Coast and Inland Climates—The Province of Davan or West Timor.

BRUSSELS.—*Le Mouvement Géographique.*

The Egyptian Sudan—Human Sacrifices on the Lower Congo—Chronology of the Congo State—News of M. Dupont—The Railroad Expedition—The Italians in the French Congo—The Problem of the Muta Nzige—The Stanley Expedition—Stanley Falls—Boma—Portuguese Congo—Exploration of the Koango.

Société Royale Belge de Géographie.

Influence of the Geological Formations in Belgium—Dr. Junker and the Wellé-Makua—Colonization and Emigration—Some Communes of Hainaut—The Routes to India—Emin Pasha's Journey to Monbuttu Land—The Position of Belgium on the Globe—The American Mission on the Congo.

BUDAPEST.—*Société Hongroise de Géographie.*

Defiles of the Valley of Gyógy—The Struggle for Existence of the Plants in the Hungarian Pusztas—The Valley of the Rima.

BUENOS AIRES.—*Sociedad Geográfica Argentina, Revista.*

Explorations in the Northern Chaco.

Boletín del Instituto Geográfico Argentino.

Orographic Study of the Cordillera of Mendoza y Neuquen—Exploration in the Interior of Patagonia and on the Coast of the Pacific—Report on the Exploration of the Araguay-Guazú.

CAIRO.—*Bulletin de la Société Khédiviale de Géographie.*

Geology of the Region between Berenice and Berber
—Latest News of Dr. Junker—The Gordian
Knot of the Sudan Question.

COPENHAGEN.—*Geografisk Tidsskrift.*

Results of the Latest Danish Exploration of Green-
land—On the Sound, which is Supposed to have
Divided North Greenland in Former Times.

EDINBURGH.—*The Scottish Geographical Magazine.*

The Caves of Staffa—Currents, Ice, Winds, etc., of
Iceland—On Some Recent Deep-Sea Observa-
tions in the Indian Ocean—The Physical Geog-
raphy and Trade of Formosa—The Cold Lakes
of New Zealand—Journey of Messrs. Browne
and O'Donnel in the Gaza Country, East Africa
—Journey from Tuaran to Kian, Province
Keppel, and Ascent of Kinabalu Mountain,
Borneo—The Relations between Commerce and
Geography.

FLORENCE.—*Bullettino della Sezione Fiorentina della
Società Africana d'Italia.*

Complementary Notes on the Article, "Dr. Traversi
in Africa"—Animal Life in Abyssinia—The
Orómo or Gallas of the Harar.

GOTHA.—*Petermanns Mittheilungen.*

The Statistics of Greece—Glance at the Geological
Structure of the African Continent—Contribu-
tions to the Physical Geography of Fernando
Po—The Southern Portion of Rio Grande do
Sul—The Religious Ideas and Certain Customs
of the Central Eskimos—Capt. J. S. King's
Travels among the Issa and Gadabursi Somali

in 1886—Farini and the Kalahari Desert—The New Boundary between Russia and Afghanistan.

HAVRE.—*Société de Géographie Commerciale.*

La Plata—Strait of Magellan—Communications in Senegal—Algeria—New Ireland—Louisiana—Traveller's Prize (for Students) and the Export Trade.

LILLE.—*Société de Géographie, Bulletin.*

The Economical Condition of Greece—The French Sudan—New Caledonia—Across the Grisons.

LONDON.—*Royal Geographical Society, Proceedings.*

Discovery of Two New Rivers in British New Guinea—The Raian Moeris; or, Storage Reservoir of Middle Egypt—The Feasibility of the Raian Project—The Desert from Dahshur to Aïn Raian—The Bar Yusuf, Roughly Describing Its Present State and Uses—The Caucasus—Notes on a Sketch-Map of Two Routes in the Eastern Desert of Egypt—A Journey round Chinese Turkistan and along the Northern Frontier of Tibet—Silva Porto's Journey from Bibe to the Bakuba Country.

Nature.

The Teaching of Geography—The Zoölogical Results of the "Challenger" Expedition—Electrical Condition of the Peak of Teneriffe—A Conspiracy of Silence—Potanin's Journeys in East Tibet and East Gobi.

LYONS.—*Société de Géographie, Bulletin.*

Gordon at Khartoum—Japan Past and Present—Irrigating Canals in the Lower Rhone.

MADRID.—*Sociedad Geográfica, Boletín.*

Colonization of the Spanish Territory in the Gulf of Guinea—The Island of Mindanao—Spanish Possessions beyond Sea and the Panamá Canal—The Kelts—Excursion to the Interior and the Eastern Part of Mindanao—The Valley of Arán (Pyrenees)—Larache (El-Araish, Morocco)—Itineraries in Morocco—Scientific and Geographical Work in Bolivia.

Revista de Geografía Comercial.

Spanish Commerce with Southern Russia—The Philippines and the Caroline Islands—The German Colony of Kamerun—Imports from Spain into Colombia—Encouragement of Spanish Imports into China—Colonial History: A Spanish Slaver in the River Gallinas—The Policy of the *Status Quo* in Morocco.

MILAN.—*L'Esplorazione Commerciale.*

Egypt—The Annamite Race—Products and Commerce of Zanzibar—The Harar—Gum Arabic in Senegal—Keren and Sanahit (in Bogos, 50 miles W. of Massowah)—The Philippines at the Time of the Conquest—African Notes—Silk Industry in Syria—Commerce of Persia.

MONTPELLIER.—*Société Languedocienne de Géographie, Bulletin.*

French, Dutch, and English Guiana—The Eucalyptus Tree, and Its Geographical Range.

NAPLES.—*Società Africana d'Italia, Bollettino.*

The Russian (Religious) Mission to Abyssinia—Slavery in Gimma Abbagifar (in the Galla Land)—The Massacre of the Porro Expedition

—The African Expedition—The Abyssinian Rebel Chiefs—The Colonial Expansion and Programme of Italy in Africa—The Country of the Habab (N.E. Abyssinia).

NEW YORK.—*Science*.

The Transcontinental Railroads—New Guinea—Nicaragua Canal—An Early Map of the Far West (Captain Lewis's, 1805, with Fac-Simile)—Surface Temperatures of the Oceans (with Map)—The Pyrenees—Armenia and Public Opinion—Afghanistan—Itinerary from Insalah to Ideles (S. of the Algerian Sahara)—The Important Position of Amguid on the Sudan Route (from Algeria)—The Franco-English Conventions—The Orinoco Basin—The French Sudan.

PARIS.—*Revue Française* et Exploration, Gazette Géographique*.

New Zealand—Exploration of the Zambezi—Collisions at Sea—Beginnings of French Instruction in Tonquin—The New Hebrides—The Bonvalot Expedition (in Central Asia)—The Don Cosacks—The Canal of the Two Seas (from the Mediterranean to the Atlantic, through France).

Revue de Géographie.

German Colonies in Western Africa—Geographical Instruction in Germany—The New Frontier between Russia and Afghanistan—Japan as It Is—The Nicaragua Canal.

Société de Géographie, Compte Rendu.

Dr. Labonne's Letter from Iceland, May, 1887—Thibet, or Tibet—Exploration of the Khon

* Now consolidated and issued alternately with the *Gazette Géographique*.

Cataract—The Ancient People of the Canary Islands—The Moroccan Sahara—The Interior of Morocco—Across the Cordilleras and the Region of the Amazon.

Société de Géographie, Bulletin.

Geographical Memoir on Eastern Thibet—The Madera and the Rivers That Form It—From Fez to Udjda—The Ports of Tonquin: Hai-phong, Quang-yen, Hove-gac.

Société de Géographie Commerciale, Bulletin.

Wady Rir and the French Colonization in the Sahara—Recollections of Travel in Bavaria, and Visits to the Favorite Châteaux of Louis II.—Kauri Gum and New Zealand—The French Sudan—The Ramie Plant.

Tour du Monde.

Tibet and the Sources of the Hoang-Ho—Through Alsace and Lorraine—Western Africa—Rouen.

ROME.—*Società Geografica Italiana, Bollettino.*

Nias Island—Origin of Christopher Columbus—Travels in the Bogos' Country—Chalmers's Explorations in New Guinea—The Republic of Colombia—From Trinidad to Atures.

STUTTGART.—*Das Ausland.*

The Topantunuasu (Native Tribes of Central Celebes—A Caravanserai in Persia—The Wild Tribes of Hither India—The Gaucho—The Ivory Trade—Banishment to Siberia as a Means of Colonization—The Galapagos Islands—The Maldives—The North American Lakes—The Highland of São Paulo in Brazil—On the Occurrence of Iron Ore and on Iron Production in

Luxemburg—Easter Week in Samos—Excursions in Central Africa—Vegetation of the South Brazilian Sub-Region—The *Gofio* (Meal, or Flour) of the Canaries—Diminution of the Waters in the Aralo-Caspian Lowlands—Winter in the Baharias—Diego Garcia—German Colonies in S. W. Africa—The Alkali Lands of California—An Earthquake (in 1868) in South America—The Beliefs of the Yakuts—The Bermudas—Ethnographical Finds from the Last Days of Heathendom in Finland.

TOULOUSE.—*Société de Géographie, Bulletin.*

Orthography of Geographical Names—Monograph on Castelnau-d'Estrètefonds (Haute-Garonne).

VIENNA.—*Deutsche Rundschau für Geographie und Statistik.*

The Railway from Paranaguá to Curityba and the Colonies Lying within its Reach—Progress of Geographical Studies in 1886—The Cholos—The Ghilzai Tribes in Afghanistan—The Royal City Jaicze, in Bosnia, and Its Catacombs—Germany's Commercial Position in the South Sea—Malay as a Commercial Tongue—Historical Monuments in Si-ngan-fu in Shen-si—Volcanic Chasms in the Valleys of the Velino and the Aterno—Railways of British India.

Monatsschrift für den Orient.

Mohammedan Marriage—The Indian Civilization—The Schools in Turkish Armenia—Opium in Indonesia.

JAMES CARSON BREVOORT.

BORN IN NEW YORK JULY 10, 1818.
DIED IN BROOKLYN DECEMBER 7, 1887.

Mr. Brevoort had been a Fellow of the American Geographical Society since 1856, a member of the Ruling Council since 1877, and for more than seven years past the Foreign Corresponding Secretary of the Society. His education, begun in this city, was completed in France and Switzerland, and he was graduated, as a civil engineer, from the *École Centrale des Arts et Manufactures*, in Paris. He spent a year in Spain as private secretary to Washington Irving, and afterwards travelled for some time in Europe. In 1843 he returned to America, married not long after, and made his home in Brooklyn, where he served on the Board of Education and as one of the Board of Water Commissioners.

He was for two years Superintendent of the Astor Library, and for ten years President of the Long Island Historical Society. He was also a member of many societies, historical, literary, and scientific, throughout the country, and few men, not in public life, were so widely known as he.

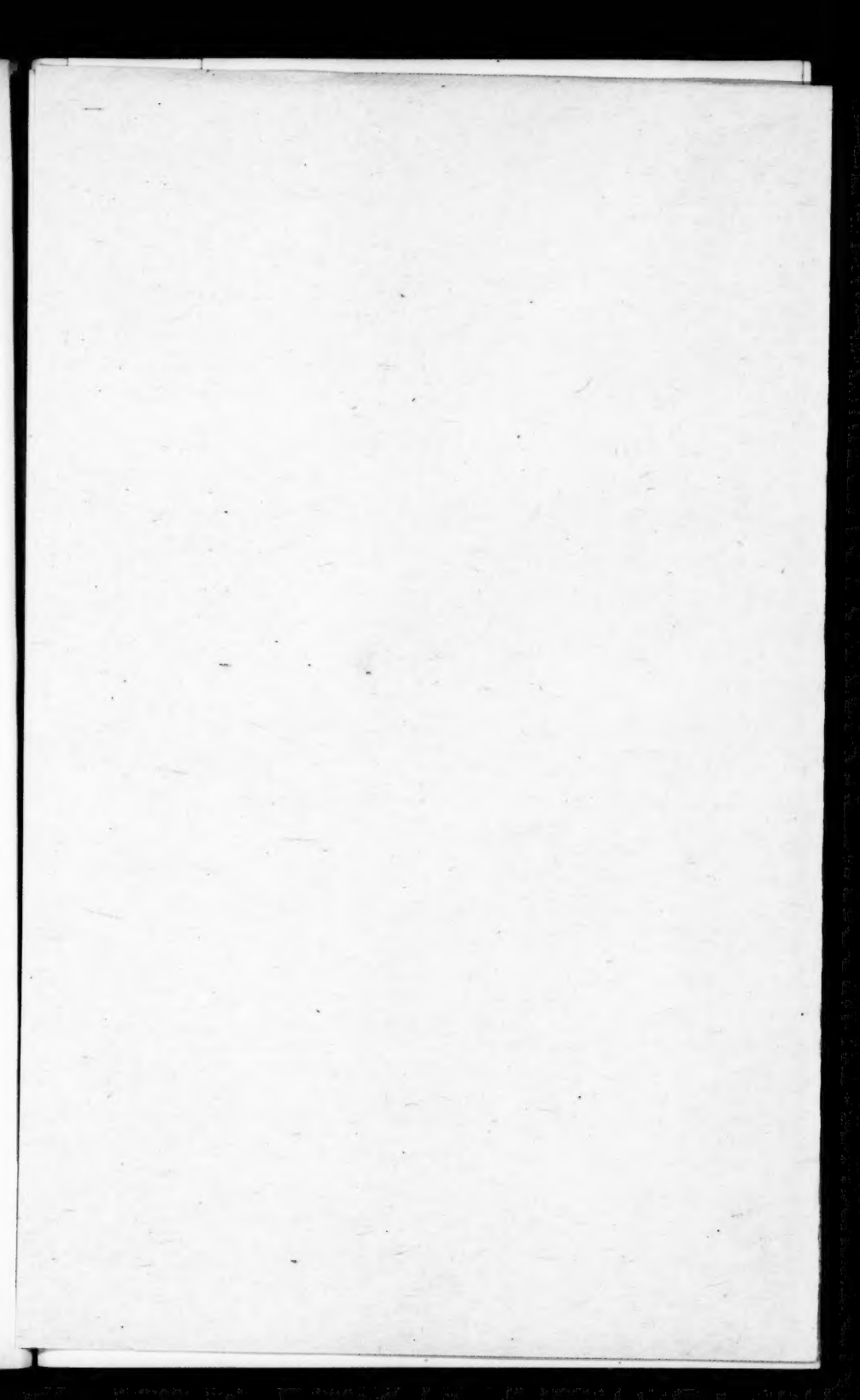
His work was that of a serious and unostentatious student, especially devoted to researches in the early his-

tory and geography of America. Failing health had for some years confined him to the house, but his interest in all great concerns was unabated to the last.

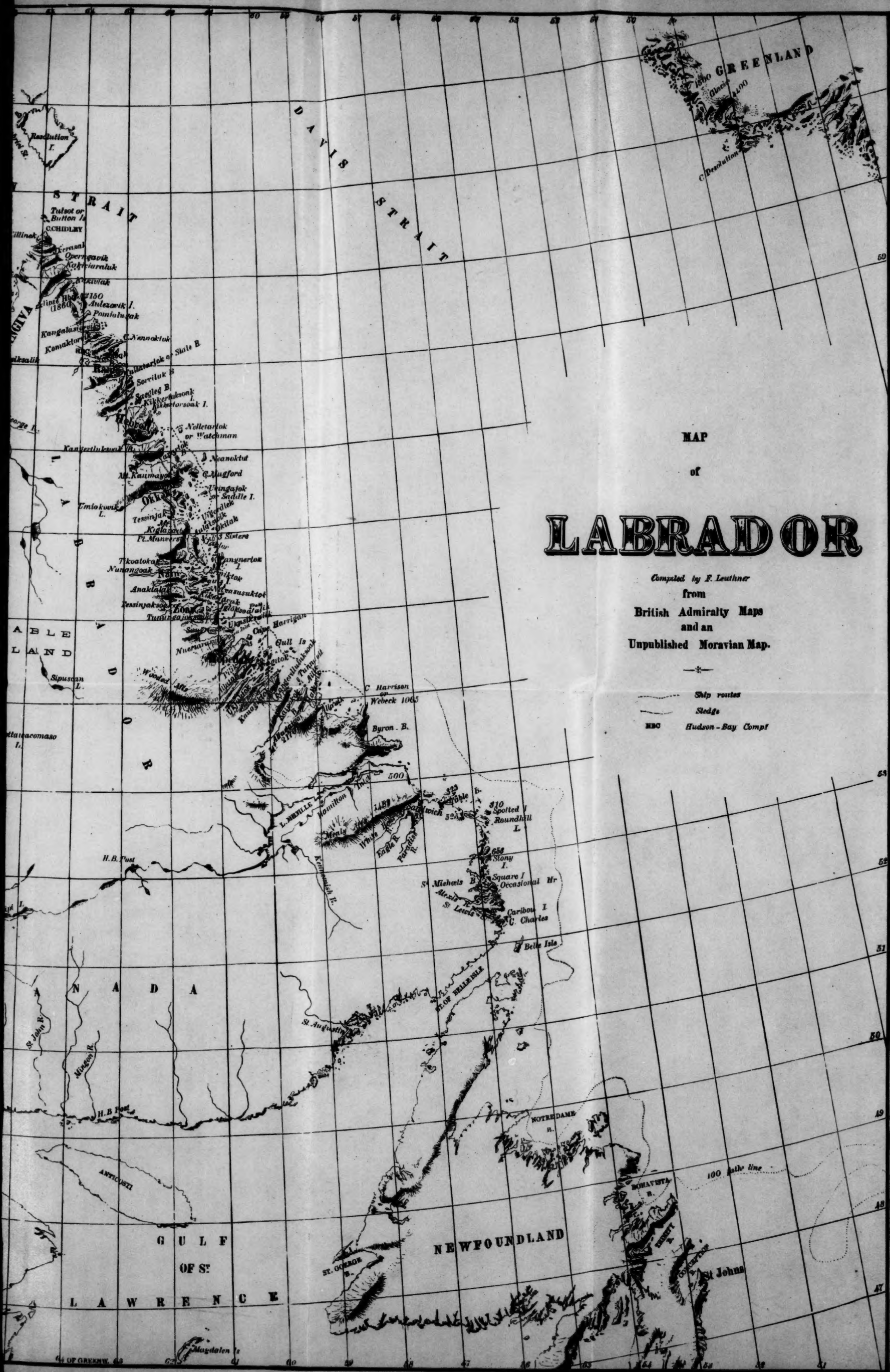
At a meeting of the American Geographical Society, held December 14, 1887, the following resolutions, offered by Elial F. Hall, were unanimously adopted :

Resolved, That in the decease of James Carson Brevoort this Society mourns the loss of one of its most distinguished and useful members and officers. His valuable contributions to the solution of important problems of geography and history, his familiarity with the progress of exploration and discovery, his attainments as a scholar, his enthusiasm as a student, his diligence and industry as a worker in the field of science, and his trustworthiness as an adviser and counsellor in matters in which we are specially interested, as well as his other qualities of mind and heart which endeared him to a large circle of friends, will ever be treasured in affectionate remembrance by his associates in this Society.

Resolved, That we extend our heartfelt sympathy to the afflicted family of the deceased, and that a copy of these resolutions be transmitted to them by the Secretary.







MAP of LABRADOR

Compiled by F. Leuthner
from
British Admiralty Maps
and an
Unpublished Moravian Map.

—*—
Ship routes
Sledges
HBC Hudson-Bay Comp